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Industrial Buyer-Seller Alliances: An Interorganizational Strategic Perspective.

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INDUSTRIAL BUYER-SELLER ALLIANCES: AN INTERORGANIZATIONAL STRATEGIC PERSPECTIVE

A Dissertation

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ABSTRACT

Industrial suppliers often seek close relationships with selected customers in order to obtain certain strategic advantages. These advantages include not only those accruing directly from the preferred position with that particular customer (e.g., an assured outlet for the firm's products), but also those related to the attainment of *mutual* buyer-seller benefits including, as examples, new product development, new market entry, reduced distribution and shipping costs, and others. These advantages are obtained by the creation of close formal and informal ties or bonds between the firms using joint product development projects, R&D projects, Just-in-Time logistics systems and others. These types of buyer-seller associations have been referred to variously as "strategic relationships," "partnerships," or "alliances."

The purpose of this study was to develop and empirically investigate a model of industrial buyer-seller alliances. Although numerous conceptual industrial buyer-seller alliance models have been proposed (e.g., Dwyer, Schurr, and Oh 1987; Frazier, Spekman, and O'Neal 1988), only a handful of empirical studies have been conducted (e.g., Heide and John 1990). The model in this study consisted of a set of situational, process, and outcome dimensions intended to "best" describe and explain the alliance. It focused on the role and importance of strategic elements (Porter 1985), switching costs (Jackson 1985; Williamson 1975), and cooperation and trust (Contractor and Lorange 1988; Macneil 1980). Thirteen constructs and 21 hypotheses comprised the full study model.

A pretest and full study test were employed. The sample consisted of industrial distributor and chemical manufacturing firms. Data collection involved a written, self-report questionnaire completed by key informants. Data analysis on the 163 usable questionnaire was conducted with LISREL (Joerskog and Sorbom 1984) and involved confirmatory factor analysis and structural equation modeling.

The findings evidenced substantial statistical support for the model and hypotheses. Hypotheses involving strategic elements, cooperation, and trust were generally supported. Two dimensions of switching costs ("hard" and "soft" assets) were identified but empirical support for their hypothesized role in the model was mixed. Future research directions and managerial implications which emerged from the study are offered.

CHAPTER 1

INTRODUCTION

Introduction

Exchange theory is fundamental to understanding and explaining marketing phenomena (Bagozzi 1979; Kotler 1984) even to the degree that marketing has been defined in terms of exchange: "Marketing is the exchange which takes place between consuming groups and supplying groups" (Alderson 1957, p. 15.). Exchange, in turn, involves the "transfer of something tangible or intangible, actual or symbolic, between two or more social actors" (Bagozzi 1979, p. 434). The "something" exchanged generally refers giving and receiving value (Kotler 1984) in order to realize benefit. Exchange involves two (or more) entities, each attempting to maximize its own utility (Houston and Gasenheimer 1987). Exchange, at this level, is viewed as a single, isolated event.

But in theory and practice, marketing involves much more than treating exchange as a single, isolated event. Good marketing management emphasizes the building of long-term *buyer-seller relationships*. The *exchange relationship* involves well-established sets of expectations and reciprocity between exchange parties (Houston and Gassenheimer 1987). In contrast to the single, isolated exchange act, the buyer-seller relationship extends over time and involves social, as well as economic exchange elements.

The limitations of viewing exchange as a single, isolated event was also recognized by Macneil (1980). Based in the legal theory of contracts, Macneil's relational exchange theory rests on two key propositions. First, that for exchange to be projected successfully into the future a set of common contracting norms must be present. Second, that transactions are not "discrete," that they are immersed to some degree in the social relationships that surround them. Relational norms theory and the exchange relationship perspective of Houston and Gassenheimer redirect attention from the single isolated, "discrete" exchange act to exchange occurring over an extended period of time involving expectations (or norms) and reciprocity between actors.

The subject of this dissertation, the industrial Seller-Buyer Strategic Relationship (SBSR), can be viewed as a specific case of the exchange relationship (or of relational exchange). Its specificity derives from its context, the industrial marketplace. Thus it could be viewed as a theory of industrial marketing relational exchange. Firms, not individuals, constitute the exchange relationship dyad. These firms, a buyer and a seller, manufacture and market technologically complex industrial products. Moreover, exchange occurs simultaneously at both the individual and organizational levels. The outcomes of exchange involve, therefore, a combination economic, strategic, technical, and social elements. Cooperation, commitment and trust are essential to the operation of the SBSR. Thus, the SBSR can be defined as an interfirm cooperative alliance between a buyer and seller, founded on trust and commitment, directed toward achieving mutual strategic and operating benefits.

These observations suggest that industrial relationship marketing is complex and differs significantly from the conventional or "arms length" view of industrial selling and purchasing. The buyer and seller firms do not act adversarially (Spekman 1979) and the assumptions underlying neoclassical economic theory of the firm (numerous buyers and sellers, conducting economic-only exchange using perfect competitive information) do not obtain. The unit of analysis is no longer the single, isolated exchange act but rather becomes the *relationship itself*- a series of cooperative exchange episodes, or interactions, occurring over an extended period of time (Cook and Emerson 1984).

The buyer and seller firms in the relationship agree to *cooperate* fully rather than cooperate minimally (or even "compete" with one another in price and other supply terms). By cooperating fully each firms believes that it can achieve greater benefits than by acting adversarially. But in cooperating, firms also assume certain costs. They consume organizational resources (managerial and functional), relinquish control and lose autonomy in order to make the relationship function. So, relationships involves significant costs as well as benefits for the participants.

Research Questions

The central question guiding this study is: How do industrial buyer-seller relationships function? This broad question translates into these specific research questions:

• How does one understand, quantify, and examine industrial marketing relationships between two firms linked together as an action system to solve complex problems and attain joint goals?

• What factors are important in explaining how and why these action systems voluntarily develop and are maintained over time?

• What conditions and processes that lead to a successful relationship?

The overall purpose of this study is to present and empirically test a theory of the SBSR which addresses these questions. The intent of the proposed research model is to explain how and why relationships between industrial suppliers and customers emerge and how they function over time. Numerous theoretical treatments have addressed this topic (see for instance Frazier, Speakman and O'Neal 1988; Dwyer, Schurr and Oh 1987; Wilson and Mummalaneni 1988). However, it has been the subject of few empirical studies (for example, Heide and John 1990, 1992; Noordewier, John and Nevis 1990). The existing industrial relationship marketing literature presents a rather disjointed collage of theoretical perspectives. No prevailing theoretic framework has emerged and the lack of consensus has inhibited theory development in the area (Heide and John 1990). According to Sheth (1976), without a comprehensive conceptual perspective, empirical research in a field tends to localize on a limited set of research issues, thereby ignoring processes, constructs, and relationships of primary importance. It is hoped that this study's SBSR model represents a comprehensive perspective of the industrial buyer-seller relationship.

A Descriptive Overview of the SBSR

The Seller-Buyer Strategic Relationship is a complex process which takes place over an extended period of time and involves numerous persons and functional groups from each firm and multiple goals and outcomes. The heart of a successful relationship is a series of *cooperative interactions* among *functional* groups (R&D, manufacturing, marketing, etc.) from each firm. These interactions involve the exchange of resources (principally information) for the purpose of generating competitive advantage for each firm. Competitive advantage takes the form of strategic, technical and operating benefits. For instance, the relationship might focus on reducing manufacturing or logistics costs or on developing new products. Whatever the purposes, these benefits or rewards must be shared, as must the risks, if the relationship is to succeed. The buyer-seller functional interactions are assisted and facilitated by a set of *management coordination* mechanisms employed by both firms. Finally, the successful relationship will involve relatively high levels of trust and commitment between partners.

A theory which attempts to capture the complexity of the industrial buyer-seller relationship described above must be comprehensive in both depth and breadth. At the same time, it should be parsimonious (Popper 1963) and amenable to empirical testing. Such a theory seeks, then, to compromise between these somewhat conflicting general research objectives: comprehensiveness versus simplicity. This study's SBSR theory attempts to achieve a balance between these two goals of science.

Theoretical Perspectives

The Current Literature

A review of the marketing literature revealed five major deficiencies in the current state of industrial marketing relationship theory and research. First, many industrial buyer-seller relationship models are conceptualized at high levels of generality and abstraction (cf. The IMP Group Interaction Model, Hakansson 1982; and The Relationship Development Process Model, Dwyer et al. 1988). It is difficult to operationalize and empirically examine such models. Second, some models are conceptualized in stages (cf. The Just-In-Time Exchange Relationship Model, Frazier et al. 1987; and The Buyer-Seller Relationship Model, Ford 1980) implying the need to employ longitudinal research designs. Longitudinal studies would be difficult to conduct because of the demands of tracking the sample firms over a extended period of several years. A model which "collapses" these stages into a formulation amenable to cross-sectional research would be preferred on practical research grounds.

Third, no existing model adequately reflects the strategic, technical and operating focus of industrial marketing relationships. Many models focus on the socio-organizational level of interaction (cf. the Model of the Bonding Process, Wilson and Mummaleneni 1988; The Relationship Development Process Model, Dwyer et al. 1988; and Spekman and Strauss 1986), ignoring the importance of the firms' striving for competitive advantage. Fourth, many of these buyer-seller relationship models are fashioned around Williamson's transaction cost economic theory (1975), or MacNeil's relational contracting theory (1980), or both. Consequently, the usefulness of these models is dependent upon the validity of Williamson's and Macneil's theories. Recent critical analyses of Williamson's theory (Francis, Turk and Willman 1983; Knapp 1989; Perrow 1986), and empirical investigations (Heide and John 1992) are revealing serious deficiencies in this paradigm. And MacNeil's theorized dimensions of relational contracting norms are proving difficult to empirically validate (Kaufman and Dant 1991; Heide and John 1992). Fifth, numerous studies in this area are normative or prescriptive and, therefore, based principally on anecdotal evidence (Spekman and Johnston 1986; Shapiro 1987b; Shapiro 1988). Clearly, the advancement of scientific understanding and explanation in this area requires more rigorous treatments than that afforded by anecdotal data.

This Study's Theoretical Foundations

Several theoretic perspectives were incorporated into the development of this study's framework of the industrial buyer-seller relationship. The substructure of the framework, the social action system, was drawn from social exchange theory. The social action system substructure provides the basis for organizing the causal relationships among the constructs in the model. The specification of the framework, that is the identification of its dimensions or constructs, drew on several theoretical foundations including resource-dependency and relational exchange theories. Construct specification insights were also gleaned from the literatures on corporate strategy and joint venturing for as well as those addressing the prescriptive and normative aspects of industrial relationship marketing.

A Summary of the Major Points of the SBSR Model

The main features this SBSR theory can be summarized as follows:

• The SBSR is a particular form of the social action system;

• Buyer and seller firms enter into the SBSR because of a need for resources (principally information) required to achieve specified strategic, technical and operating purposes or benefits. Resource dependence is a primary motivator of engagement in the relationship.

• The relationship, as opposed to other alternative forms of project development, is perceived by the participants to offer the "best" (most cost-effective and strategically beneficial) approach to obtaining these benefits.

• The determinants of resource dependence address long-term product, market, and technological elements. In a word, the SBSR is "strategically driven."

• The principal resource exchanged in the SBSR is information directed toward the accomplishment of strategic aims; those related to product, market and technology directions of the firm. The value of the information resides in its contribution to solving mutual strategic, operating, and technical problems directed toward achieving the firms' objectives.

• The central process of the SBSR is a series of buyer-seller firm functional group interactions, since functional groups (R&D, marketing, manufacturing, etc.) are the main repository of the firm's strategic (technical, product, and market) information.

• The functional interactions can be conceptually viewed as a constellation of three reciprocally interrelated variables: (1) the *intensity* of the functional group interactions, (2) their *cooperative* orientation, and (3) *trust*. A successful relationship builds gradually over time reflecting the growth in the strength of these three qualities of the relationship interactions or development process.

• Cooperation refers to interfirm interaction behaviors characterized by (a) open sharing of information, (b) joint action, (c) flexibility in the face of changing circumstances, (d) an aversion to the use power to influence the other party, and (e) a reluctance to cheat, even when presented the opportunity.

• The outcomes of the SBSR involve sets of strategic and psycho-social benefits and costs for its participants.

These aspects of the model are described in detail in the next section.

The Conceptual SBSR Model

The conceptual model, portrayed in Figure 1.1, presents the overall framework and key dimensions of the SBSR theory. The conceptual model represents the synthesis of the various theoretical foundations of the SBSR theory. The *empirical* model, and related hypotheses, are detailed in Chapter 2 of the Dissertation. The empirical model is derived from the conceptual model by identifying the main constructs and causal relationships of interest. The purpose of the structural model is to provide a basis for empirically testing the theory. The discussion in this section refers to the conceptual model in Figure 1.1. For descriptive and analytical purposes, the conceptual model is discussed from the viewpoint of one firm, the supplier.

The Framework of the Conceptual Model

The overall framework is based on the assumption that the Seller-Buyer Strategic Relationship (SBSR) is a particular form of the interorganizational relationship which occurs when two or more organizations transact resources (money, physical facilities and materials, customer or client referrals, technical staff services) among one another (Van de Ven 1976). The interorganizational relationship (and therefore the SBSR) is patterned after the social action system consisting of three major components: (1) The Situational or Contextual dimensions, (2) the Process and Structural Dimensions, and (3) the Outcome dimensions (Van de Ven 1976). Different types of system structures and processes are best suited to specific environmental conditions. Thus, systems operating in different environments are likely to adopt different internal structures and processes. The goodness of fit between the system's internal characteristics and its environment helps determine the nature of its performance outcomes (Van de Ven and Astley 1981).

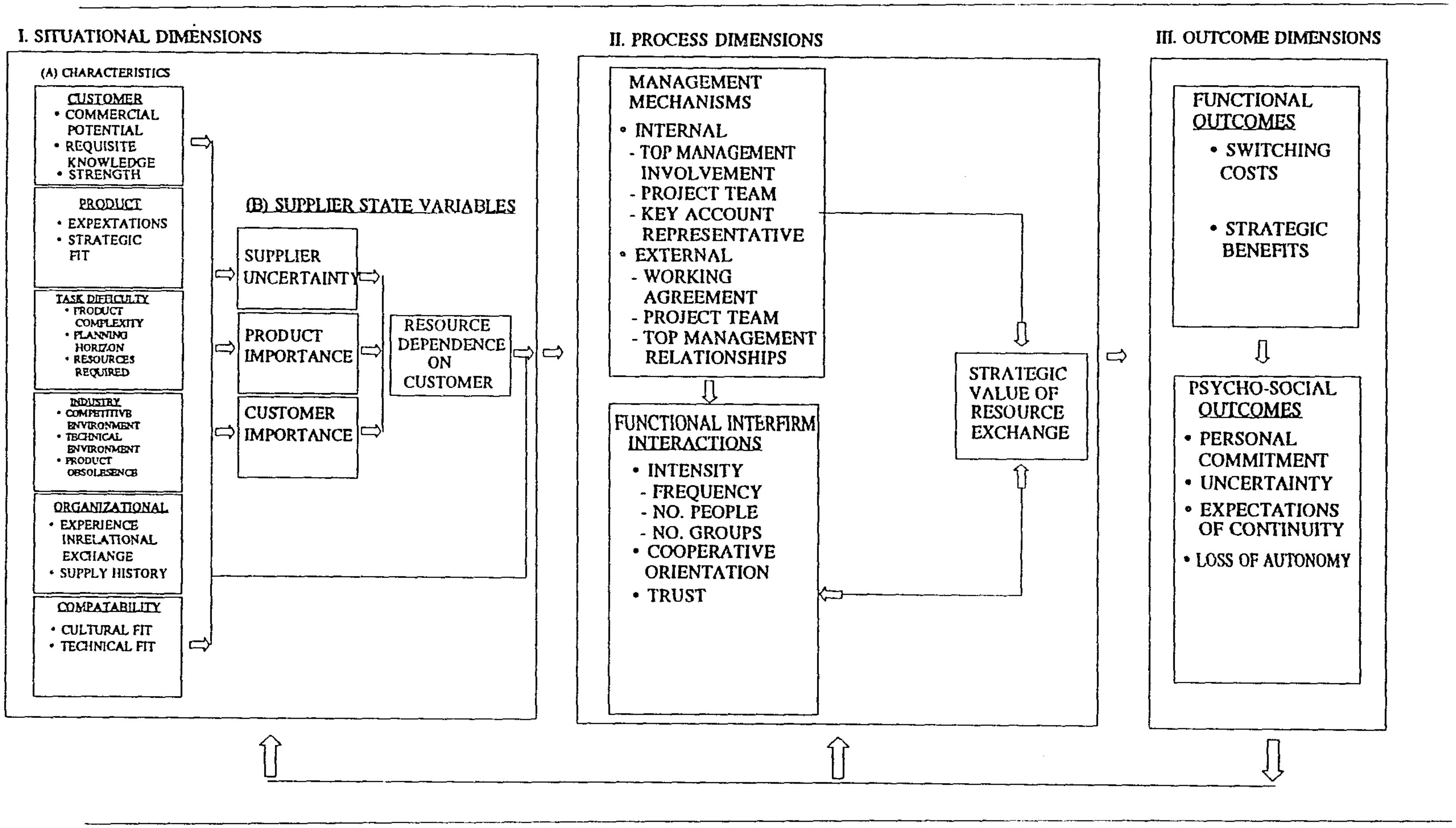


FIGURE 1.1.
CONCEPTUAL FRAMEWORK AND DIMENSIONS OF THE SBSR

The Role of Strategic Considerations in the Model

Social exchange theory (Homans 1958; Thibaut and Kelley 1959) suggests that exchange occurs on the social level, as well as economic level. This study's SBSR theory posits that a third level of exchange exists in the industrial marketing context. Strategic elements are postulated to be instrumental in the development and maintenance of the industrial buyer-seller relationships. The SBSR is theorized to be primarily motivated by the existence of certain strategically—based antecedent conditions—the SBSR is "strategically driven."

Strategic elements relate to decisions and actions of the firm that have a major impact on the business unit (or firm), require significant resource commitments, and are not easily reversed (Buzzell and Gale 1987). Strategic matters generally concern the long-term direction of the firm which are reflected in decisions related to matching its products, markets and technology (Hofer and Schendel 1978). Consequently, the term, *strategic*, in this theory, refers to product, market, and technological factors that have a long-term, major impact on the SBU, and that involve the largely irreversible commitment of significant levels of the firm's resources.

According to Porter (1985) the purpose of strategy is to create sustainable competitive advantage. Competitive advantage is developed by pursuing one (or a combination) of three major "generic" strategies: differentiation, low cost, or focus. From an industrial marketing perspective (the context of this study), differentiation is often achieved by creating a superior performing or higher quality product (reduced impurities, tighter specifications); low cost, by more efficient or higher yielding manufacturing processes and/or more efficient logistics systems (Shapiro 1987b; Derose 1991). Consequently, achieving these objectives within the context of the SBSR requires strategic resources—technical and market information, knowledge and insights.

Situational Dimensions

A firm has several options available in its pursuit of competitive advantage: it can employ internal development; it can purchase the required technology or expertise (for example by acquiring a competitor); it can enter into a joint venture; or it can enter into an SBSR. An SBSR is appropriate, according to the theory, given the presence of a particular set of situational dimensions or determinants. The situational dimensions incorporated into this theory are discussed next.

Firms do not enter into cooperative arrangements for cooperation's sake. Instead, organizations strive to maintain their autonomy (Goulender 1959). Autonomy means that organizations are capable of choosing the course of action they desire to pursue (Levine and White 1961). From the supplier's point of view, to become involved in the customer relationship implies (a) that it loses some of its freedom to act independently, when it would prefer to maintain control over its domain and affairs (Schermerhorn 1975), and (b) that it must invest scarce resources (personnel and financial) to develop and maintain relationships with other organizations, when the potential returns on this investment are often unclear or intangible. For these reasons, a supplier prefers not to become involved in an SBSR unless it is compelled to do so.

Two reasons appear sufficiently compelling for the SBSR to develop: (a) an internal need for strategic resources or (b) an interest in an external strategic problem or opportunity. These two reason become fused when predicting the overall emergence and development of interorganizational relationships (Van de Ven 1976). In varying degrees all firms depend upon their environments (including other firms) for information and other resources to attain their strategic objectives (Pennings 1981). Organizations, including firms, are "pushed into such interdependencies because of their need for resources—not only money but also resources such as specialized skills...and the like" (Aiken and Hage 1968, pp. 914-915).

Therefore, the key situational dimension in the model is the supplier's strategic resource dependence on the customer. The greater the resource dependence on the customer, the greater the motivation of the supplier firm to engage in a relationship.

The supplier is hypothesized to perceive a state of customer resource dependence when:

(A) **The customer is considered to be "important"** (Shapiro 1987b). A strategically important customer: (1) possesses the market and technical information that will help achieve the supplier's strategic aims, (2) offers sufficient future and/or existing commercial potential (i.e., profits and revenues) to justify the costs of involvement, and (3) is a long-term force in its own industry as evidenced by its distinctive competitive position (Ellram 1991).

(B) **An "important" product is involved** (Spekman and Strauss 1986). This means that the product (1) is a critical component of the strategic portfolio of the SBU (or firm), and (2) offers opportunities for substantial levels of supplier revenue or profit (Frazier et al. 1988);

(C) **The supplier is uncertain about achieving its strategic goals through conventional, internal project development** (Frazier et al. 1988; Spekman and Strauss 1986). High environmental uncertainty is regarded as a principal factor motivating organizations to develop interorganizational relationships (Galaskiewicz 1985). The term, uncertainty, captures both the sense of doubt (questioning or apprehension) and sense of possible loss (risk) through the misspending or misallocating the firm's limited resources. The cooperative alliance offers one means of reducing risk by sharing resources (Contractor and Lorange 1988) and of reducing uncertainty (Arndt 1979; Ford 1980).

(1) **the task or project involved is perceived as being relatively difficult.** A difficult task is evident (a) when the product in question is "complex." Complexity refers to product which is technically sophisticated in its design, manufacture, and/or application and performance in the customer's products (Shapiro 1987a); (b) when the project is likely require a relatively long time to complete; and (c) when the resources required (manpower and capital) are relatively large.

(2) **the SBU resides in an industry environment which can be characterized by**: (a) an intense competitive environment (Frazier et al. 1988); (b) rapid technological. change; and (c) rapid rate of product obsolescence.

Several other characteristics act in unison with customer resource dependence to directly motivate the engagement of the SBSR. These characteristics are (1) a history of successful supply/purchase with that customer (Ford 1980), (2) some track record of successful relationships with other buyers, and (3) a perception by the supplier that the customer is "compatible" (organizationally, culturally and technically) (Ellram 1991; Ford 1980).

The Process Dimensions

The process component of the model consists of a series of ongoing interactions among functional groups and individuals from both firms (Shapiro, Rangan, Moriarty and Ross 1987). This behavioral component of the SBSR is conceptualized as a process of iterative, dyadic group interactions between supplier and buyer occurring over an extended period of time. These groups are generally represented by the technical and marketing functions since the goals of the relationship involve attaining technical and strategic advantage (Shapiro 1987).

These interfirm functional interactions are theorized to have both a quantitative and qualitative character (Van de Ven 1976). The quantitative character, referred to as the "intensity" of the interactions, is reflected in (a) the frequency of group (team) meetings and (b) the number of groups and individuals involved in the relationship (Frazier et al. 1988). The qualitative character, referred to as the "cooperative orientation" of the relationship, reflects certain specific interfirm behaviors. The firms will interact (a) with limited use of power and harmonious resolution of conflict (Frazier et al. 1988), (b) with flexibility and the use of "give and take," (Macneil 1980), (c) with the willingness to share valuable, proprietary information and not reveal confidences (Buckley and Casson 1988), and (d) jointly in decision making, planning, problem solving, and goal identification (Spekman 1988). The value of the exchange of information and the ensuing strategic benefits are a function of the extent to which cooperation is established in the relationship.

The cooperative functional interactions are conceptualized as an iterative and evolving process of increasing levels of interaction leading to higher levels of trust and cooperation which, in turn, generate relatively high levels of exchange of valuable strategic information. The recognition by functional participants that the relationship is creating valuable information exchange (leading eventually to strategic benefits) further increases the level of trust and cooperation.

This process does not occur quickly; the SBSR is more likely to emerge incrementally and grow with small successful interactions between functional groups. Both partners recognize the importance of reciprocation (Houston and Gassenheimer 1987), the exchange of valuable resources for mutual strategic advantage. Trust is extremely important between the supplier and customer because of the long-term commitments made by each side. As Williamson notes: "Other things being equal, idiosyncratic exchange relations that feature personal trust will survive greater stress and will display greater adaptability" (1975, pp. 62-63).

The degree of interfirm cooperation is also a function of the strategic resource dependence of each partner on the other. Each participant sees the other as providing complementary strengths (in the form of resources) to the relationship (Arndt 1979; Varadajan and Rajaratman 1986). The relationship is viewed as a means of generating "partnership advantage" (Sethuraman, Anderson and Narus 1988, p. 327), the combining of complementary resources in a cooperative fashion to achieve individual and mutual strategic goals. The principal reason why each firm is willing to engage in the relationship is that it believes that the other can provide essential strategic and technical information, access to markets, and other resources required to help achieve its own goals.

The process component of the model also includes a set of coordinating and monitoring activities or mechanisms related (1) to its own activities and (2) to the relationship interactions (Spekman and Johnston 1986). These management activities include (a) the appointment of a "key coordinator" (Schurr 1986), (b) the appropriate involvement and participation by top management (Schurr 1986), (c) agreement on a project or "secrecy" agreement (Schurr 1986; Frazier et al. 1988), and (d) the establishment of project teams, both within and between firms (Schurr 1986; Spekman and Johnston 1986).

Outcome Dimensions

The outcome dimensions of the model can be categorized as either "strategic" (product, market, or technological) or "psycho-social." Further these dimensions can be further divided into costs and benefits. Thus, all outcome dimensions can be classified into four categories: strategic costs or benefits and psycho-social costs or benefits.

The primary strategic benefit to the supplier is the actualization of the strategic aims or goals which motivated the SBSR in the first place. These may relate to improved product quality and performance, to reduced manufacturing costs, or to an improved logistics system resulting in the benefits typically associated with the JIT concept. Reaching a long-term supply agreement (Schurr 1986) may express the ultimate culmination of a successful relationship. The principal functional cost is the development of "switching costs" (Jackson 1985), investments in plant or other long-term capital, procedures, and people which tend to be irreversible and transaction specific (Williamson 1976).

The primary psycho-social benefits are reduced uncertainty (Dwyer et al. 1987), a sense of loyalty (Dwyer et al. 1987) and commitment (Wilson and Mummalaneni 1988) to the relationship, and expectations of continuity of the relationship (Heide and John 1990). The major psycho-social cost is a perception of loss of autonomy and feeling of "exposure" (Jackson 1985), attendant with becoming committed (both individually and organizationally in the form of switching costs) to the given customer.

Methodology

The SBSR model was empirically tested using structural equation modeling techniques. The construct validities of the model's variables were determined by evaluating the measurement model and through other psychometric methods. The hypotheses were examined by testing the magnitude and statistical significance of the empirical model's path coefficient estimates. The design was cross-sectional and incorporated field research (as opposed to experimental) methods. Data collection involved mailed, self-report questionnaires completed by key informants in the supplier firm. The key informant method is a technique for collecting information in social or organizational settings by interviewing a selected number of participants (Phillips and Bagozzi 1986), and is subject to a number of methodological concerns and caveats (John and Reve 1982). The informants are chosen because they possessed special qualifications such as particular status, specialized knowledge, or accessibility to the researcher. The choice of informant-respondent type is crucial since he/she must possess the requisite knowledge regarding the origins, operation, and outcomes of the relationship. In some instances, prescreening was used to qualify respondents for key informant status. Most respondents were drawn from the sales, marketing, and general management positions. As a check on the qualifications of informants, each questionnaire contained self-report scales addressing their degree of knowledge and involvement in the firm's customer relations.

The questionnaire instructed the informants to address the items with reference to a given customer relationship. The referent relationship could have approached from several different points of view: as a scenario depicting the relevant characteristics of an industrial marketing relationship; as a self-selected customer about whom he or she is most knowledgeable (see Heide and John 1990); as the "most important customer in terms of invoiced sales" (Hallen, Johanson and Seyed-Mohamed 1991, p. 33); or as the primary customer (Noordweir et al. 1990). This study employed the self-selection approach for two reasons. First, it was judged to best assure that the respondent had actual experience in the relationship process. Second, it was intended to establish in the respondent's mind a concrete and substantive experiential image of the relationship.

The survey was administered in two phases. The first phase, the questionnaire pretest, had three main objectives: to assess construct validity; to respecify scales as required; and to reveal possible improvements in the questionnaire format or wording of items. The primary purpose of the second phase, the full test, was to evaluate the study's hypotheses. Construct validation and scale respecification were also conducted as part of the full test.

The study's context was defined as a particular set of product-market parameters:

- Product—raw and processed materials, industrial component parts and other intermediates, industrial supplies and services;
- Geographic domain—domestic U.S.;

- Industry domain—several industries were represented including the chemical, industrial distributor, environmental, fluid power, and automotive supply industries;
- Distribution channel domain—both manufacturers and distributors were surveyed.

This context was adopted because:

- It encompasses a cross section of industrial products, industries and distribution channel location;
- Much of the industrial marketing relationship literature is based on this context (see for instance, Frazier et al. 1988; Shapiro 1988). Therefore, more theoretical support and background is available from studies in this context.
- This particular set of context dimensions may represent the most "naturally" and frequently occurring context of marketing relationships. For example, firm-to-firm marketing of technologically complex products may naturally lend itself the establishing long-term relations founded on trust.

The study's sample size was dictated by the requirements structural equation modeling approach employed, LISREL (Joreskog and Sorbom 1988) LISREL, the analytical techniques used. To achieve useful results in LISREL, a sample size of 150 is recommended (Anderson and Gerbing 1982). The construct validation process employed a number of statistical guidelines and indexes including Cronbach's alpha and item-to-total correlations (Churchill 1979) and confirmatory factor analysis (CFA) measures of composite reliability, variance extracted, chi-square fit statistic, Goodness of Fit Index (GFI), Adjusted Goodness of Fit (AGFI), and normed chi-square index (Hair, Anderson, Tatham and Black 1992). Unidimensionality was also be assessed by examining the number and magnitude of the normalized residuals and the magnitude and significance of the lambda coefficients (factor loadings). The hypotheses were tested by an evaluating magnitude, direction, and statistical significance of the path coefficients using LISREL (Joreskog and Sorbom 1988).

Contributions and Implications

Theoretical Contributions

By design, this study was intended to redress the shortcomings in the current literature identified above. First, this study has operationalized many constructs heretofore only theoretically addressed. Many new scales were developed for this purpose. Second, the troublesome problem of performing longitudinal research (recognizing that the relationship, in reality, is a time-dependent process) was obviated by incorporating variables into the model which simultaneously assess past, present, and future perspectives. To operationalize this conceptual approach, the respondents were required to respond to the questionnaire from both a retrospective and projective viewpoint.

Third, the "strategic theme" of the study was depicted by including technical and product-market dimensions in the model. Fourth, while Williamson's transaction cost economics and Macneil's relational contracting theories have been utilized to support the new theory, these viewpoints were not an essential part of the theoretical foundations of the framework. The model's framework and perspective derive primarily from interorganizational relations, resource dependence, social exchange, and corporate strategy theories. The conceptualization of cooperation employed is, to this author's knowledge, unique to the study. Finally, the normative and prescriptive industrial marketing and purchasing relationship literatures are especially utilized in specifying the structural model. Prescriptive assertions and informed speculation on the relationship have been selectively incorporated into the model in the form of specific variables and important associations.

Managerial Implications

The study's findings may aid management decision making by addressing these questions: (1) When is it reasonable to consider entering into an SBSR? What factors should the supplier evaluate before embarking on an alliance? (2) Which customers are legitimate candidates for a successful relationship? What are the features of each firm (the screening factors) that portend a successful partnership? (3) How can the supplier institute, develop, foster, and maintain the relationship? What kinds of organizational, procedural, behavioral, and contractual elements are present in the successful relationship? (4) What benefits and costs can the supplier anticipate from the SBSR? What goals and objectives can the supplier realistically anticipate?

CHAPTER 2

LITERATURE REVIEW AND THEORY DEVELOPMENT

The first section of this chapter traces the development of the different theoretical and normative approaches to long-term, industrial buyer-seller relationships. The second section presents the theoretical formulation of the SBSR structural model—the major constructs are described and the hypotheses presented and supported.

Review of the Literature

This section assesses the progress made in developing theories of relationship interaction behaviors between buyers and sellers since the emergence of the IMP Group model (Hankansson 1982). The major competing models of the interaction process that have been proposed in the ensuing period are reviewed. For each model, the theoretical underpinnings are examined, the major characteristics identified, and the strengths and weaknesses explored. The main purpose of this review is to identify conceptual themes which would be instrumental in the formulation and support of the development of the SBSR model.

The IMP Group Interaction Model

The purpose of the IMP Group Interaction Model (Hankansson 1982) is to develop a comprehensive picture of relationships between buying and selling firms which are characterized by stability instead of change, long lasting relationships instead of short business transactions and closeness rather than distance. Its theoretical foundations reflect interorganizational theory and the new economic institutionalists represented primarily by Williamson (1975). The principal insights, however, emerge from an inductive approach based upon data collected from a large international study of buyers and sellers in Europe. These field studies contributed to the development of the IMP model by suggesting the variables for inclusion in the model, depicted in Figure 2.1.

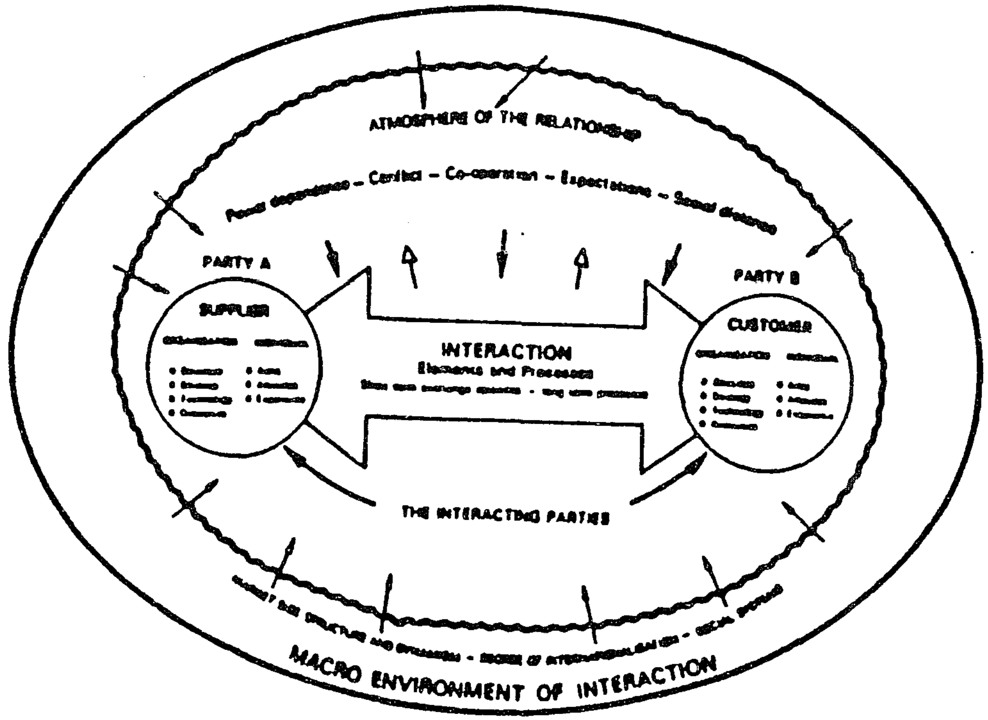


FIGURE 2.1.
IMP GROUP INTERACTION MODEL
(Turnbull and Valla 1985)

The four major elements of the model are:

(1) The interaction process;

(2) The buyers and sellers in the interaction process;

(3) The environment within which the interaction takes place;

(4) The atmosphere of the relationship.

Resources in the form of products, information, financial and social exchange episodes define the interaction process. These exchange episodes can be viewed as the basis of interaction between buyer and seller. The development of social relationships can over time become institutionalized such that neither party questions the mores and values that have developed to support the relationship.

Both individual and organizational variables are used to specify the characteristics of the buyer and seller interaction process. Although buyer and seller interaction is detailed in some depth, the constructs are not well defined in terms of measurement and operationalization.

The atmosphere of the relationship encompasses such variables as power dependence, conflict, cooperation and social distance. Social distance appears to be a combination of both physical and psychic distance between the buyer and seller. "Atmosphere," according to this theory comprises a number of interacting variables that "are not measured in a direct way in this study. Instead the atmosphere is considered as a group of intervening variables, defined by various combinations of environmental, company specific, and interaction process characteristics. The atmosphere is a product of the relationship, and it also mediates the influence of the groups of variables" (Hankansson 1982, p. 21). Clearly, atmosphere is a complex construct with a multi-faceted impact in the model. Operationalizing and measuring this construct presents formidable conceptual and methodological problems

The environment is a broad set of economic and social factors which are conceived to act differently upon the buyer and seller. These macro variables are likely situation specific and open to definition within any given context.

The relationships of these major constructs comprising the model and the performance or relationship quality are qualitatively determined; i.e., this is primarily a descriptive study. A set of propositional statements that is the beginning of a testable theory have not been developed and the model has not been rigorously tested.

The Relationship Development Process Model

The purpose of the Dwyer et al. (1987) model is to outline a framework for developing buyer-seller relationships and to suggest what relational properties may be of consequence in buyer-seller exchange. The model, portrayed in Figure 2.2, is grounded in relational contracting and social exchange theory together with insights drawn from the marketing channels literature. Relational exchange, according to this model, differs from transactional exchange in that it occurs over time, has a history and anticipated future, involves collaboration based on trust and planning, and results in the participants deriving complex personal and noneconomic satisfactions (social exchange).

This theory suggests that firms pursue relational exchange in order to develop competitive advantage, to reduce uncertainty, to managed dependence, to exchange efficiency (i.e., achieve synergies), and to gain social satisfactions. A relationship involves, however, costs including resource expenditures (economic and psychic) required to maintain the relationship, opportunity costs of forgone exchange with alternative partners, and switching costs.

Exchange activity is posited to intensify over time and depends upon the extent to which the relationship is managed. Five stages are advanced: (1) awareness, (2) exploration, (3) expansion, (4) commitment, and (5) dissolution. Stage 1, awareness, refers to one firm's

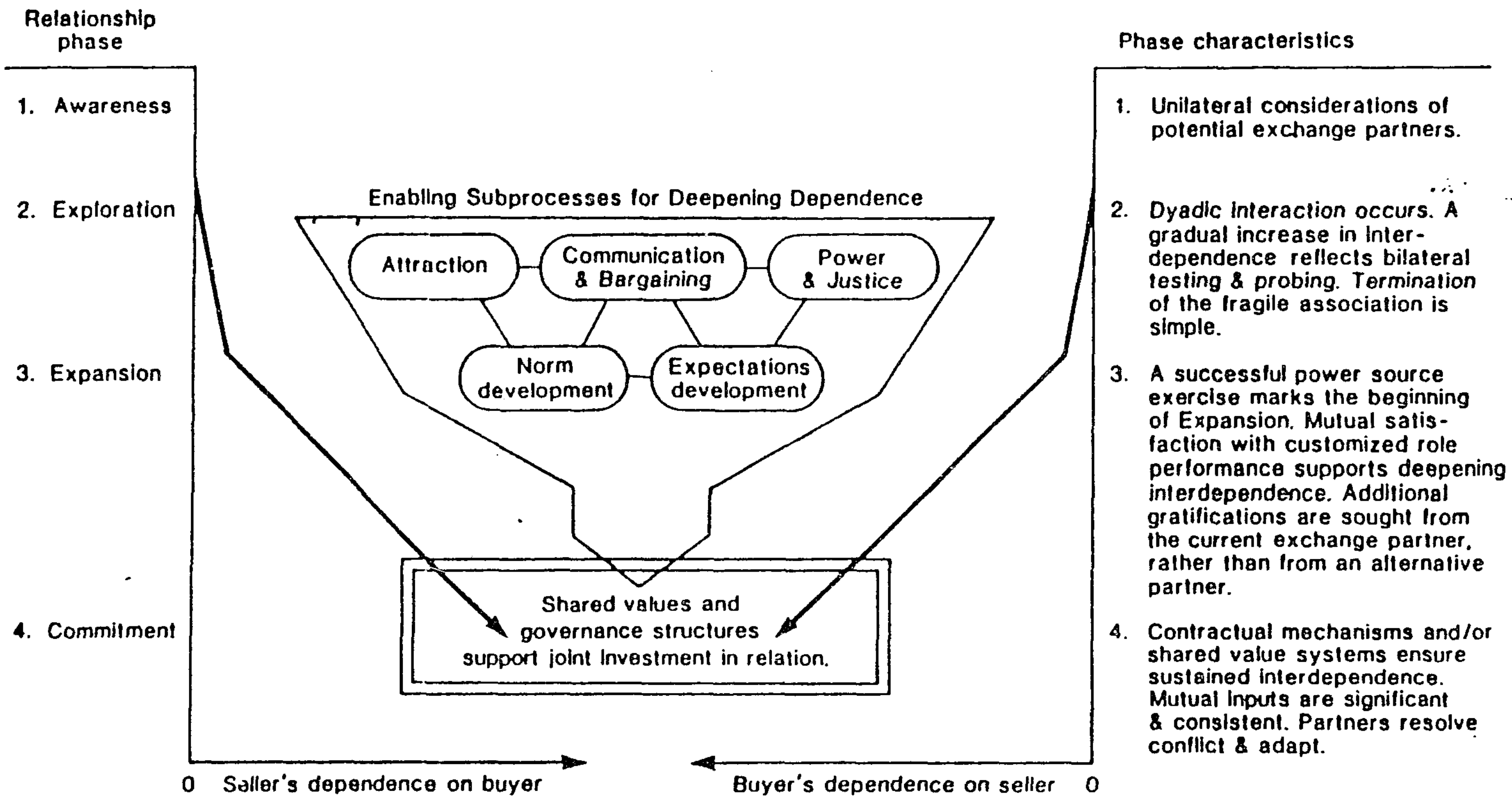


FIGURE 2.2.
RELATIONSHIP DEVELOPMENT PROCESS MODEL
(Dwyer, Schurr and Oh 1987)

recognition that the other is a feasible exchange partner. It is characterized by situational proximity between firms, positioning and posturing to enhance attractiveness of one firm to another, and any type of bilateral interaction that serves to increase awareness and interests. Stage 2, exploration, addresses the search and trial phase of relational exchange. This stage is characterized by several firm behaviors including trial purchases, testing and evaluation of products and services, establishing perceived similarity of beliefs, values, or personality and of complementary resources, including money, information, services, legitimacy, and status, willingness to negotiate, evidencing interest in other's goals, asking questions, reciprocated disclosure of intimate information, bargaining and coordinating, bilateral communication of wants, issues, inputs, and priorities, successful exercise of power (i.e., not using coercion or dominance), adopting and establishing standards of conduct (norms), establishing expectations regarding conflicts of interest, and establishing trust.

The expansion stage (stage 3), refers to the continual increase in benefits obtained by exchange partners and to their increasing interdependence. It is characterized by the willingness to take increased risks, the development of increased interdependence through reciprocal rewards, perceptions of goal congruence and cooperativeness, and the process of "expansion" through market penetration. The next stage, commitment, refers to an implicit or explicit pledge of relational continuity between exchange partners. This stage is characterized by high levels of satisfaction, a maintained awareness of alternatives but without constant and frenetic testing, high levels of commitment which result from each party providing relatively high levels of inputs and benefits from the exchange relationship and the ability to predict outcome from the exchange because of consistent behaviors. The final stage, dissolution refers to the withdrawal or disengagement from the relationship. It is characterized by negotiate unbonding and direct statement to other party to terminate.

The theory suffers from a too-heavy reliance on conceptual foundations and empirical evidence from exchange theory and its offspring -- concepts of marriage, bargaining, and power, creating difficulties in distinguishing among commercial, work, and romantic relations. Relational contracting dimensions are very general. The proposed model is abstract and lacks obvious ways to operationalize the stages and key variables. Nevertheless, it has sufficient generality to cover both interfirm and consumer relationships and provides a framework for unifying and extending research. The stages of relationship development are well developed and presented.

The JIT Exchange Relationship Model

The purposes of the JIT (Just-in-Time) Relationship Model (Frazier et al. 1988) are (1) to expand on our understanding of the exchange relationships between suppliers of component parts-materials and OEMs in industrial markets; (2) to clarify the differences between market exchanges and relational exchanges; (3) to develop a conceptual framework focusing on constructs and processes that help to explain levels of interests in and preferences for JIT exchanges; and (4) to develop a framework centering on factors posited to influence the success-failure of initiated JIT exchange relationships; how exchanges are maintained, resolved, or avoided. Several theoretical perspectives underlie the model including the political economies framework, resource-dependence framework, transaction cost analysis framework, interorganizational exchange framework, and relational exchange framework.

JIT exchange is characterized by a large number of factors: a long-term time horizon, emphasis on core products and value-added services, a tangled web of relations across functional areas, high levels of both formal and informal communications, information exchange that involves joint product-, production-, and logistics-related functions and long-range planning, high levels of shipping, sole-sourcing, high levels of specialized investments (specific to customer or supplier), high levels of functional interdependence, high levels of risk and proactive and join problem-solving orientation.

As shown in Figure 2.3, the relationship is posited to develop or build across four stages: (1) Interest, (2) Initiation-Rejection, (3) Implementation, and (4) Review. The first stage, Interest, is characterized by relatively high levels of decision-making uncertainty emerging from a situation comprising a changing external economy, strong competitors, and dynamic environmental change. The relationship partner perceives the need to better position itself by stabilizing an eroding competitive position, cutting costs, gaining technical superiority, improving product quality and gaining first-mover advantage. These needs are especially apparent when the firm's product is characterized as important and requiring improvement in either price or quality.

The firm will initiate or reject a prospective partner (initiation-rejection stage 2) depending upon a confluence of particular situational variables. High levels of the following variables will encourage initiation of the relationship: transaction-specific assets (between firms), availability of potential JIT partners, strategic vulnerability, financial resources available to customer, high uncertainty, highly uncertain environment, moderately concentrated supplier market, supplier who has the capability and technological expertise (to make the JIT relationship work), good fit between organizations' cultures, firms which possess complementary skills and competencies, shared value systems, the customer's purchased product and finished product are of only moderate importance, the supplier is losing market share, and the firms' desire to attain stability, certainty, commitment and trust.

The essence of interactions between partner during the Implementation Stage is a collaborative orientation and high levels of cooperation reflected in fairness in dealings. Even when an imbalance of power exists, the relationship is marked by non-coercive use of power. The interactions involve relatively large number of committed personnel and

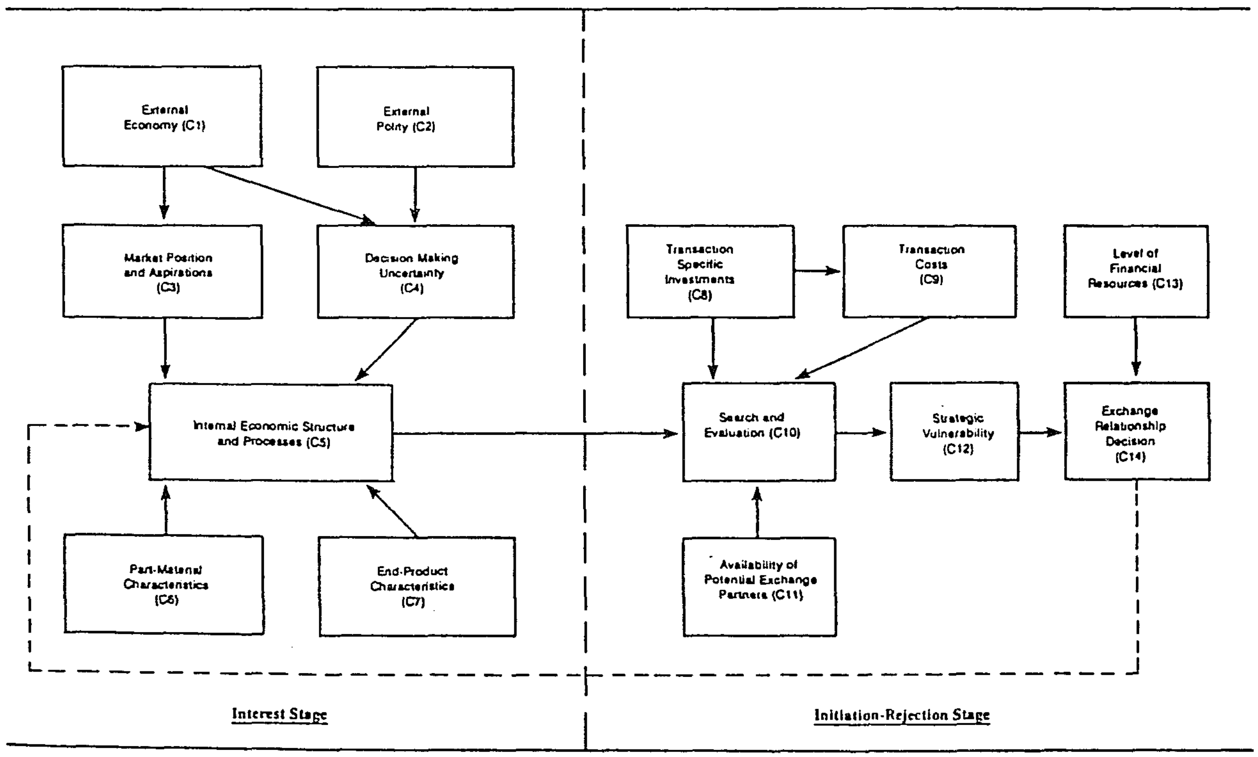


FIGURE 2.3.
JIT EXCHANGE RELATIONSHIP MODEL
(Frazier, spekman and O'Neal 1988)
(Figure cont'd)

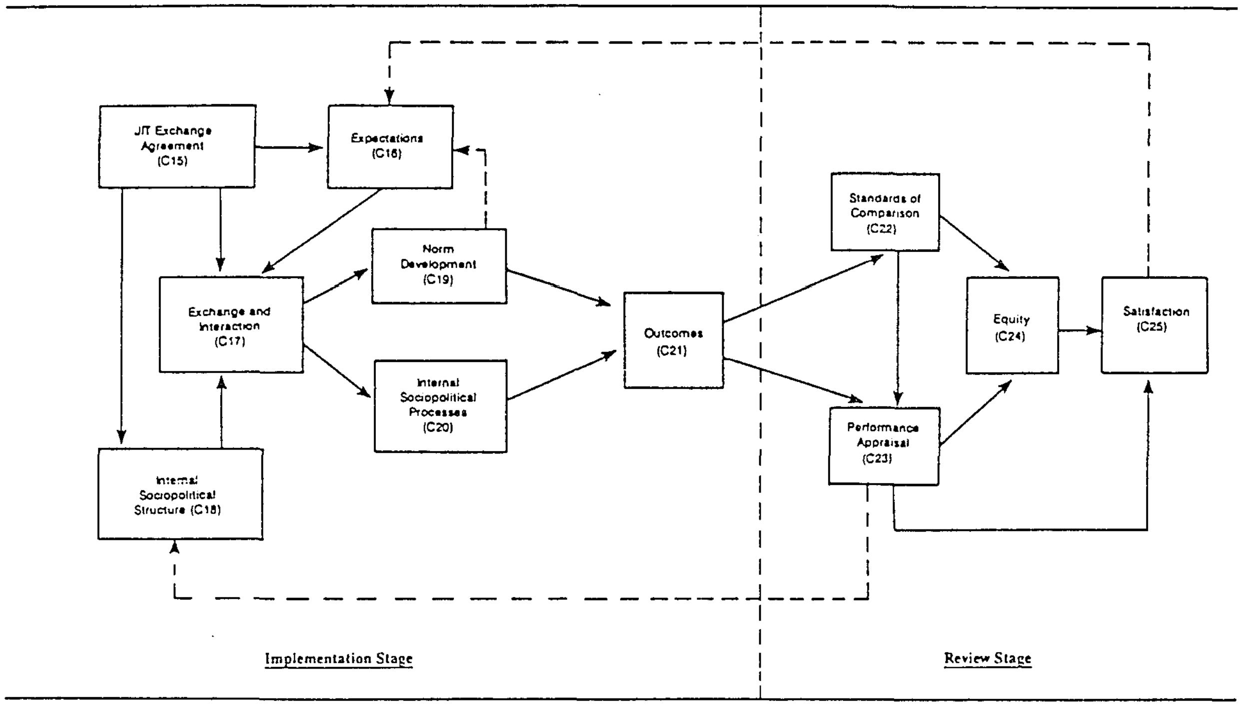


FIGURE 2.3 (Cont'd)
JIT EXCHANGE RELATIONSHIP MODEL
(Frazier, Spekman, and O'Neal 1988)

functional groups working to solve problems jointly. Friendships and acquaintances develop which encourage interpersonal trust and provide evidence of personal integrity. Norms, standards of conduct and general ground rules emerge which lead to improved responsiveness and synchronized interactions. Even though the relationship may include a formalized JIT exchange agreement, self-regulation as opposed to legal regulation, is the preferred norm. Given these interaction mechanisms and behaviors, the successful relationship can result in improved profits, reduced costs, reduced inventories, technological developments, improved product quality, and increased sales for the firm partners. Individual outcomes include enhanced satisfaction and commonality of goals.

This model represents, arguably, the most complete and comprehensive theoretical treatment of industrial relationship theorizing and model building. By adopting the integrated approach, the authors identify the inherent complexity in interfirm relationships: the interaction of economic, strategic, and psycho-social factors over time in the relationship building process (stages). The model's structure provides a basis for identifying and classifying each variable as a situational state, process factor or outcome of the relationship. This identification provides a basis for ensuing empirical investigation. The constructs and their associations are well conceptualized though in some instances they lack specificity. Other weaknesses include too little recognition of strategic and technological considerations in relationship development and a failure to distinguish long-term (strategic) considerations from shorter-term (logistics, economic-based) considerations.

The Bonding Model of Long-Term Relationships

The bonding model of long-term relationships, depicted in Figure 2.4, is the realization of a evolving series of theoretical formulations by Wilson and colleagues (Wilson 1989; Wilson and Mummalaneni 1988: Wilson, Dant and Han 1990). Its theoretical underpinnings include social exchange theory, the Dyadic Sales Process Model (Wilson

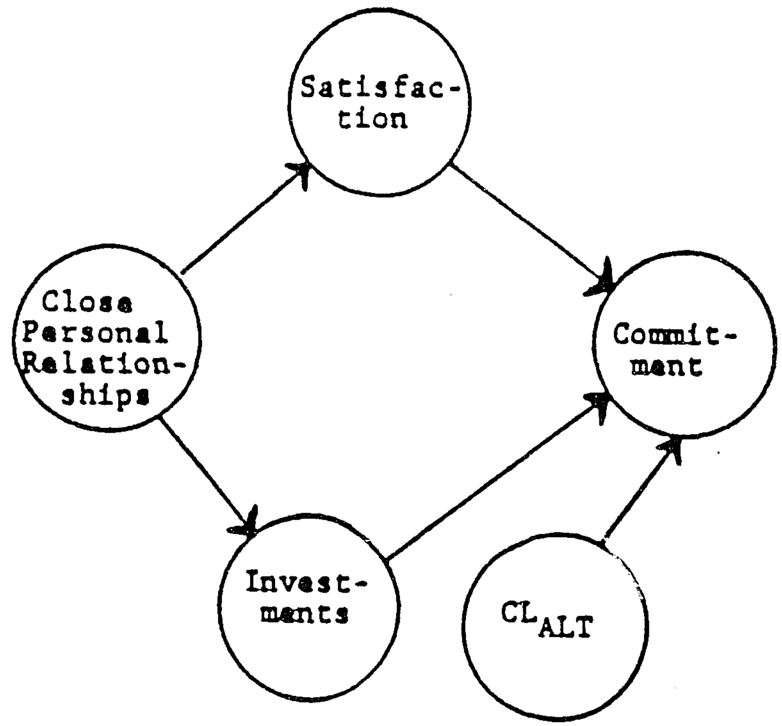


FIGURE 2.4.
SOCIAL BONDING MODEL
(Mummalaneni and Wilson 1988)

1975), and elements of the IMP group model (Hankansson 1982). The major dimensions of this model are described next.

Satisfaction is seen conceptually as the net of rewards minus cost of the relationship. Rewards and costs are both measured in terms of economic and social exchange. Broadly, satisfaction is the degree of positive affect associated with a relationship and involves the positive nature of feelings toward the relationship as well as the partner and the closeness of this relationship to a participant's perspective of an ideal relationship. Commitment is determined by multiple factors and is viewed conceptually as the dedication to the continuation of a relationship. It can be measured as the behavioral intention to continue participation in the relationship and the inverse probability of leaving the relationship.

CL_{alt} is a measure of the best alternative relationship other than the current one in which the firm is involved. It can be measured using a multi-attribute model where C_{alt} is the difference in performance between the existent supplier and the best available option. The concept of social bonding is operationalized as the strength of a personal relationship between the buyer and seller and may range from a business relationship to a close personal relationship. Personal relationships are characterized by the greater degree of self-disclosure and concern and liking for the other person. Structural bonds are the multiplicity of economic and social factors that develop during a relationship that tie the partners together. Structural bonds involve irretrievable investment, social pressures to maintain the relationship, ease of dissolving the relationship and contractual barriers to ending the relationship.

The Heide and John Stream of Research

The Heide and John (1988, 1990, 1992) research stream may represent the most empirically investigated perspective on relationship marketing. This subsection will review the two most recent empirical studies by these authors. The purpose of Heide and John

(1990) is to describe a model of original equipment manufacturer-supplier ties that identifies specific dimension of such relationships. This treatment focuses on describing in operational terms the shifts away from traditional arm's length purchasing arrangements. Its theoretical perspectives include transaction cost analysis and various descriptive theories from organizational research.

The buyer-seller alliance marked by bilateral governance, continuity, verification of supplier and a multidimensional phenomenon involving joint action. Since transaction cost economic theory is theoretically prominent in this formulation the buyer's and supplier's specific investments are key elements. The other major constructs include volume unpredictability, technological unpredictability, performance ambiguity, expectations of continuity, supplier verification, and joint action.

The purpose of Heide and John (1992) is to investigate the role of social norms in describing and explaining marketing relationships. This study is directed toward addressing numerous criticisms (e.g., Perrow 1986) of transaction cost economic theory (Williamson 1975); viz, that exchange is embedded in social structures in which opportunism—a linchpin concept in TCA—is the exception rather than the rule. Drawing on Macneil's relational contracting theory (1980), this study specifically studies the importance three relational contracting dimensions, flexibility, information exchange, and solidarity, in explaining the buyer-seller relationship. Relational norms are found to be a possible explanatory mechanism for the ability of firms to implement the relationship (desired relational structures).

Miscellaneous Buyer-Seller Relational Studies

The purposes of Hallen et al. (1991) are to analyze interfirm adaptation in business relationships and to provide a general structural model of adaptation in business relationships. Grounded in social exchange, power-dependence, relational contracting, and transaction cost analysis theories, this model views the relationship as a process occurring across stages. The term, "adaptations," refers to the dynamic nature of the interfirm relationship. Sellers are dependent upon customers based on the level of customer importance and buyer concentration. Buyers are dependent upon sellers based on percentage of purchases, market share, and product complexity. The strength of the adaptation is measured in terms of switching costs (or idiosyncratic investments or asset specificity). The relationship is viewed as a "totality"—i.e., the combination of social and economic considerations. Adaptation is seen as a process closely related to technology; i.e., technology is an important factor fostering business relationships.

The principal constructs include (1) Customer Dependence measured by the degree of supplier importance, market share, and product complexity; (2) Supplier Dependence measured by the level of customer importance and buyer concentration; (3) Customer Adaptation reflected in the changes the customer is willing to make in its product, process, and production planning; and (4) Supplier Adaptation reflected in the changes the supplier is willing to make in its product, process, and stockholding.

The study by Noordewier et al. (1990) combines transaction cost analysis and relational contracting theory to empirically examine the relationship between the organization of the buyer-supplier interface and performance in the procurement of repetitively used items. It offers, from the buyer's perspective, a model of purchasing of repetitively used items, and outlines the theory relevant to understanding the structure of buyer-vendor relations. The relationship theorized to be marked by high levels of supplier flexibility, increased willing to provide the buyer assistance, the exchange of large amounts of information--proprietary, planning, and technical, active supervision by the buyer to assure performance by the vendor, and expectations of continuity. This approach delineates variables into three structural categories: antecedents, relationship processes, performance outcomes.

Specific governance structure elements or dimensions (process variables) of purchasing relationships include:

- Supplier flexibility
- Supplier assistance
- Proprietary information provided to supplier
- Monitoring of supplier
- Expectations of continuity
- Uncertainty elements
- Elements of buyer transaction performance:
- Inventory turnover
- Percentage of on-time delivery
- Percentage of acceptable shipments

The antecedent variables that are posited to impact on relationship formation include:

- Dollar amount of buyer's purchases
- Dependence of supplier on buyer
- Relative price paid
- Distance from buyer
- Number of annual purchase orders

The theoretical analysis by Spekman and Strauss (1986) is directed toward developing a conceptual framework of the buyer-seller relationship by extending Williamson's TCA (a) to provide a more micro-oriented approach and (b) to focus on dimensions of the transaction, transaction costs and strategic vulnerability. Combining transaction cost economic theory with political economy and resource dependency theories, this study focuses on the interdependent nature of buyer-seller interactions, concerns with cost reduction and quality assurance, R&D programs and other mechanisms for sharing technology, resources and expertise, and a closer, more open working relationship with suppliers. While providing insight into *situational* variables which address the strategic selection of the relationship partner this analysis suffer from a too great a reliance on TCA theory (see Perrow, 1981) and a failure to incorporate actual behaviors and outcomes—all constructs are perceptions, concerns, or anticipations. The framework includes these key situational state variables as instrumental in fostering and maintaining the relationship: the importance of the purchase; the perceived uncertainty and strategic vulnerability attached to the association with a sole supplier.

The purpose of the analytic study by Varadarajan and Rajaratman (1986) is to provide an update of symbiotic marketing by (a) overviewing its nature and scope, (b) demonstrating the use of symbiosis, (c) reviewing the environmental and organizational factors which motivate the acceptance of symbiosis, and (d) discussing guideline for planning and implementing a symbiotic program. Based on the Symbiotic Marketing formulation of Adler (1966) together with strategic perspectives drawn from corporate strategy, growth strategies, vertical/horizontal integration, and diversification strategy, this approach defines Symbiotic Marketing as "an alliance of resources or programs between two or more independent organizations designed to increase the market potential of each" (Adler 1966, p. 60). Synonyms for symbiosis include collaboration, strategic partnerships, teaming up, and networking. In terms of the dimensions of Symbiotic Marketing: long-term, close working, specific to a given function or spanning the organization across functions, and joint formulation of overall marketing strategies or of specific marketing programs.

By emphasizing the strategic perspective of relationships, this analysis provides the strategic antecedents to entering into relationship (symbiotic marketing), the types of strategic growth approaches that can be employed (i.e., intensive, integrative, diversification), and the types of environmental, product-market, and organizational variables factors that interact in the relationship. These situational variables which foster Symbiotic Relationships include:

- Environmental Factors...
  - Advances in and convergence of current technologies
  - Emerging technologies
  - Regulation
  - Impact of deregulation
- Organizational
  - Complementary and compensatory strengths and weaknesses
  - Risk pooling
  - Resource considerations
  - Complementary asset deployment/redeployment decisions
- Product-Market Characteristics
  - Complementary relationship between goods and services
  - Market characteristics
  - Competitors' actions.

Distributor-Manufacturer Firm Working Relationships Model

Long-term relationships have been the subject of numerous studies within the context of marketing channels (cf., Anderson and Narus 1990; 1984; Heide and John 1988; Dant and Schul 1992; Sethuraman et al. 1988). This review will focus on the Anderson and Narus formulations which have received the most empirical investigation to date.

The original Anderson and Narus Model of Distributor Firm and Manufacturer Firm Working Relationships (1984), portrayed in Figure 2.5, is grounded in social exchange

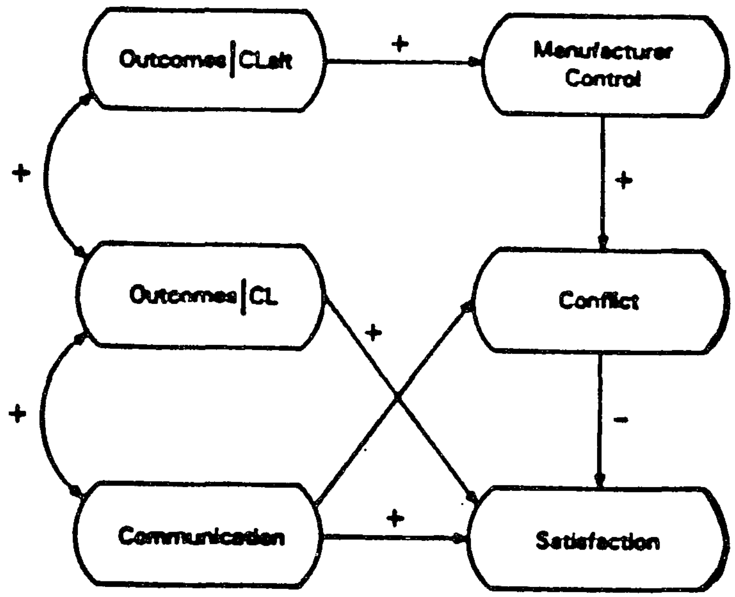


FIGURE 2.5.
DISTRIBUTOR'S WORKING RELATIONSHIP MODEL
(Anderson and Narus 1984)

theory based on the theoretic frameworks of Thibaut and Kelley (1959) and Homans (1958). Anderson and Narus posit that the results of interaction between the distributor and manufacturer (termed outcomes) represent the rewards and cost for each participant in the interaction. These results are evaluated against the quality of the outcome the participant expects to receive within a given relationship. This comparison basis, called CL, is described as the standard representing the quality of outcomes the channel member participant has come to expect from a given relationship, and knowledge of other participants' similar relationships. The comparison alternate, called C_{alt}, is described as the average quality of outcomes that are available from the best alternative exchange relationship. C_{alt}, thus, represents the lowest level of outcomes a channel member will generally accept and still remain in the relationship.

Other constructs in this model include conflict, satisfaction, manufacturer control, and communication. Conflict is the frequency and degree of disagreement between the partners. Satisfaction is the positive feeling that results from an evaluation of all the aspects of the relationship. Manufacturer control refers the ability of the manufacturer to exert control over the distributor's behaviors and therefore to have the ability the exert unilateral power. Communication refers the formal and informal exchange of information and meaning between partners.

The refined model (Anderson and Narus 1990), portrayed in Figure 2.6, represents modifications which followed from a series of field interviews. The basic structure of this model remains the same but some of the constructs were modified to reflect more adequately the complexities of the exchange relationship. Relative dependence is the perceived difference between the firm's dependence and its partner's dependence on the relationship. It is conceptualized as outcomes measured by C_{alt} and represents the average quality of outcomes that are available for the best alternative relationship.

Influence over the partner firm and influence by the partner are constructs that reflect the reciprocal nature of a partnership and the need to have one's partner take action to bring about positive outcomes for one's firm. They represent the ability to exert power to influence to impact the partner and therefore capture the sense of the behavioral control construct. Trust is the expectation that one's partner will take actions that result in positive outcomes for the firm and leads to trusting behavior by each partner. Cooperation refers to complementary action by the firm to achieve mutual benefits. Functionality of conflict is the effective management of stress in the relationship.

By incorporating the perspectives gained from the field qualitative research, the extended model (Figure 2.6) provides a more realistic portrayal of the interfirm relationship. By blending theory and empirical results, these authors have provided a theoretical representation of reality which offers both explanatory and predictive capability. Early empirical investigations are providing encouraging results.

Various "Normative" Models of the Relationship

This subsection summarizes the perspectives provided by a number of normative or prescriptive treatments of industrial relationship marketing:

- Wilson, Dant and Han (1990)
- Spekman and Johnston (1986)
- Schurr (1986)
- Shapiro, Rangan, Moriarty and Ross (1987)
- Jackson (1985)

The main purpose of the field investigation by Wilson et al. (1990) is to assess the perceptions and opinions of practitioners on both sides of the industrial buyer-seller dyad about the nature of their relationship with sellers/buyers. The theoretical perspectives are primarily normative and descriptive. The relationship can be defined as a business rapport,

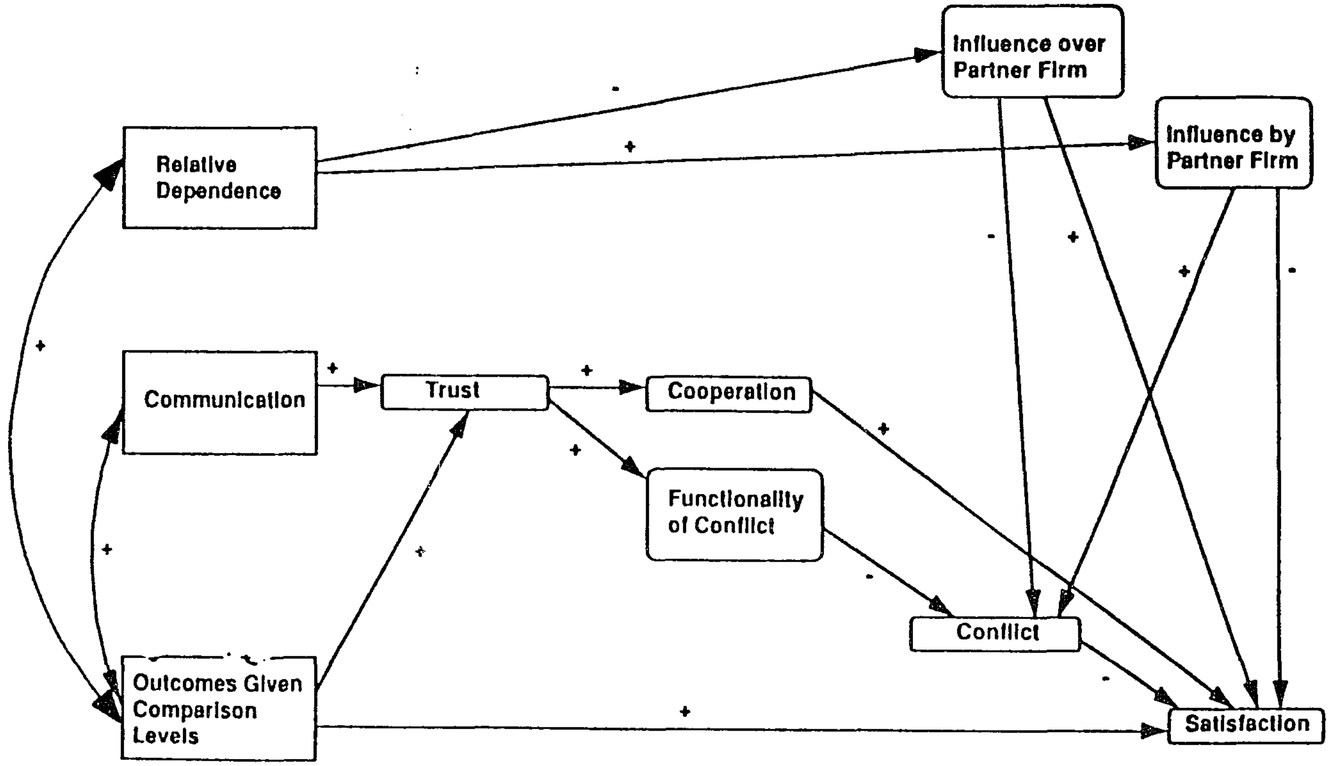


FIGURE 2.6.
WORKING PARTNERSHIPS MODEL
(Anderson and Narus 1990)

bound by obligation, investment, and commonality of interest, the purpose of which is to create value. (This viewpoint is courtesy of NCR Corporation.) The strengths of this approach include the use of a true dyadic approach and factors drawn from real world viewpoint.

Important elements of the relationship identified in the study include improved operations evidenced by shorter product development times, lower manufacturing and operating costs, quality and productivity improvements, reduced lead time in purchasing, reduced development process of suppliers, enhanced marketing efficiency, optimal capacity planning and purchasing cost reductions. These beneficial results obtain when the firms agree on an overall emphasis on cost reductions and manufacturing effectiveness and efficiency. The competitive edge provided by these results emerges when the partners increased technical cooperation, established a sense of customer orientedness and established commitment and mutual trust in the relationship. The downside of the relationship included a sense of uncertainty due to over dependence on the partner and the concern with the possibility of a better alternative partner in the future could be found.

The purpose of the approach outlined by Spekman and Johnston (1986) is to present a conceptual approach to understanding and structuring relationship management and to provide a managerially useful framework for implementing industrial marketing strategy. The examination derives primarily from the normative and descriptive industrial marketing literatures. Relationship management is seen as involving systems contract selling, long leadtimes, long-term service obligations, and strategies which go beyond traditional marketing concerns. This treatment provides a good listing of real world, management-based factors involved in creating and maintaining the relationship. The emphasis is on managing the relationship from both the seller and buyer side of the dyad.

Managing the selling center involves joint (interfunctional) marketing planning, establishing close links of RandD, manufacturing, and marketing, providing offerings which involve service or technical support and stockless inventory systems, cooperation and coordination of different functional groups, organizing control mechanisms to achieve high levels of cooperation, creating and maintaining shared appreciations of interdependencies, and reaching agreement concerning appropriate coordination and control strategies.

Managing the buying center involves the development and fostering of interpersonal relations, helping to shape the scope of buying problem, interceding in the buying process to move the decision toward resolution, and assembling buying center information regarding buying center members, formal and informal roles each plays, individual product or supplier concerns, and perceptions of competition vis-a-vis offering characteristics. The supplier should also manage the information flows to the buying center by controlling its timing, perceptions of supplier and/or product, involvement of decision participants, and degree of perceived risk involved. Extent of control between firms can be administered through informal mechanisms--loose lateral interactions or formal mechanisms--task force and team selling.

The major purpose of the Schurr (1986) is to examine the development of buyer-seller relationships in business marketing as a basis for competitive strategy. The theoretical perspective is primarily what Schurr terms "theory in use," or qualitative exploratory research represented by interviewing a practicing marketing relationship manager. Exchange theory, social contract theory, and relational contracting are also incorporated. The term, relational marketing, refers to orienting the entire marketing mix toward customer service and buyer-seller interdependence. In Schurr's formulation, "relational contracting" is only a part of the larger idea of relational marketing. The concepts of the social contract and norms and standards of conduct, both explicit and implicit, that project exchange into the future provide the noncontractual elements of the overall marketing relationship.

This study is a rich source of practitioner-based procedures and activities for building customer relationships. It also provides an extensive listing of benefits of relationship and preconditions which foster establishing and developing the relationship. The behavioral dimensions of relationship building (strategies and tactics) include the following specific elements:

- Relationship Building—Preliminary steps
    - Provide consultation by salesperson
    - Salesperson learns customer needs
    - Salesperson prepares a letter describing proposed benefits of supplier's offerings to customer
    - Involve customer's top management
- Appropriate sales force structure
    - Key account salesperson
    - Coordinator
    - Personnel with specialized expertise
- Help customer develop specifications
    - Working with customer's design and manufacturing engineers
    - Determining customer's needs (before purchase)
        - Custom design offering into customers' factory
        - Fill in gaps in customer's expertise
- Team selling
    - Involve customer with all functions and levels of the seller's organization
    - Account Coordinator utilizes other functions

- Relationship Contracting and Negotiating
    - Discussions and actions lead to contracts--purchase agreements
    - Sales person knowledge of customer's needs focuses offerings so that unnecessary and costly extras avoided
    - During negotiations, small concessions made (by seller) as gesture of goodwill
    - Seller provides training and servicing programs to effect transfer of knowledge
    - Involve distributor in servicing and inventorying on behalf of customer
    - Structure supply arrangements so that customer can attain higher discounts by increasing size of purchase quantities and by extending the life of the contract so that a higher dollar volume is involved.
    - Write contracts that:
        - Provide volume discounts
        - Provide incentive to purchase packages of products and/or services
        - Provide dollar discounts
- Internal coordination by Account Coordinator
    - Helps prevent legal staff from interfering with relationship by over-legalizing process
    - Works with contract manager (or legal) to resolve contract terms differences between buyer and seller
    - Seeks flexibility early on in negotiating process

Contractual Relations will tend to develop when:

- Sales adds up to a large dollar amount

• Multi-year purchase agreement is arranged

• A large national account requires the risk-reducing certainty provided by a reputable manufacturer-sponsored service and support system

• Magnitude of the deal is great

• Duration of supply agreement is long

• Product Characteristics involve

  - supplier's offering impacts on the customer core technology
  - supplier's product can be customer designed

The benefits of this approach to team selling include

• Supplier gets "specked in" with customer

• Creates perceptions by customer that the supplier is:

  - Expert
  - Reliable
  - Reputable
  - Viewed positively

• Builds commitment and sense of obligation on the part of the customer

• Forces communications at all levels between and seller

  - Problems solved easier at lower levels
  - Extends the duration of exchange
  - Increases number of parties involved
  - Increases among of interorganizational networking
  - Implicitly obligates reciprocation
  - Creates positive expectations about seller's future performance
  - Enhances personal relationships
  - Initiates a cooperative mode of interaction

- Establishes joint buyer-seller planning
- Develops the seller's expert base of power

The purpose of Shapiro, et al. (1987) is to examine three aspects of individual account selection and management: costs to the supplier, customer behaviors, and management of customers. This article identifies the need to treat the development of major industrial customer as a strategy; i.e., the need to manage the customer. Also, the importance of price in the marketing mix is emphasized.

The process of managing customers consists of several interrelated steps:

- Pinpointing costs—especially for specialty products
- Classifying customers according to price-cost relationship
- Defining a strategy for managing the account
    - Classifying customers according to (a) low-cost, low-service, low-price versus (b) value-added customers—differentiated and augmented products with intensive service requirements and customizing.
    - Deciding which behavior is most consistent with company's strengths
    - Providing internal support systems
        - Establishing a system to determine prices that reflect spread of customers (cost-conscious vs. specialty).
        - Establishing the value the customer places on your offering
        - Establishing separate price-setters and price-negotiators
        - Coordinating among engineers, field-service staff, and other functionaries (interfunctional coordination)
    - Repeating this analysis regularly

Barbara Bund Jackson's (1985) book is a prescriptive treatment directed toward practicing industrial marketing managers. Based on qualitative field research (interviews and analysis of actual marketing alliances), this approach focuses on examining the practices of successful relationships. Buyer-seller associations can be divided into two opposing types: "always-a-share" and "lost-for-good." The lost-for-good model assumes that a customer repeatedly makes purchases from some product category over time. At any one time, the account is committed to only one vendor. Thus, the purpose of relationship marketing strategy is to secure and nurture the lost-for-good type customer. The key to successful relationship marketing is a focus on the individual account. The pre-conditions for relationship development include an environment in which technological pace of the product marketplace is rapid, coupled with a customer's need for up-to-date technology. The customer can benefit by achieving better product performance, lower cost, or both.

A lost-for-good customer is acquired by fostering the development of customer "switching costs," which serve to increase customer commitment to the seller. Switching costs are investments in people, lasting assets, and/or procedures which are useful only or primarily with the give supplier (customer). Investments in people include the hiring of people specifically trained in vendor's product, learning the supplier's product with extended use, training existing personnel (and less formal learning), and working with vendor's representatives. Investments in lasting assets include plant, equipment, and other facilities.

Suppliers should develop relationship marketing strategies which attempt to influence customer's raising switching costs. However, the supplier should recognize that this high level of dependence on a single supplier and technology can engender feelings of high levels perceived exposure by the customer. The supplier can help reduce this sense of exposure by demonstrating a sound financial condition, a history of product development, and a capable RandD organization. In short, the characteristics of the buyer-seller relationship include the lost-for-good type account, high switching costs, substantial investment actions, especially in procedures and lasting assets, high perceived exposure, a focus on a technology or on one vendor, and high importance—strategic, operational, and/or personal.

The supplier has a set of marketing "tools" available to influence the customer into the "lost for good" category. These tools, which can be viewed as the vendor's extended marketing mix, include:

- product (broadly defined to include design, engineering and even the vendor's general technological stance and direction
- channels of distribution (including logistical systems)
- communications (including sales, advertising, and public relations)
- price (including payments terms and conditions)
- AND the vendor's basic business strategy...
  - technological capability
  - financial ability to survive
  - staying power of technology

In deploying these tools the supplier should use long-term tools—the more general building blocks—first. Use shorter- medium- and longer-term tools in combination. Use shorter-term tools to aid longer-term ones—tailor longer-term tools to needs of specific customers and to respond tactically (e.g., demonstrate servicing capability by providing good delivery times). The identification and use of the "longer-term tools" to increase switching costs to secure the "lost-for-good" customer comprises overall the relationship building strategy of the firm.

The basic principles of relationship marketing are to:

- emphasize the individual account;
- involve the full vendor organization;
- involve top management to assure coordination;

• coordinate sources of information;

• have the sales force to provide detailed information about the account's usage system, plans, and reactions;

• use "technologists" and product developers to provide information about changes in technology, especially as they relate to future products and to existing products;

• use senior managers to provide insights into the attitudes and interests of senior managers in the customer's organization; and

• manage the marketing strategy as an ongoing process.

Specific tools include the following suggested approaches and tactics. The supplier should...

• Sell the whole vendor organization by displaying a strong customer focus and emphasizing capabilities of the total vendor organization, especially long-term capabilities; sharing with customers and potential customer some of its basic business strategy and its individual product-line strategies; emphasizing active concern for the account; providing more emphasis to the vendor's general technical capabilities; placing more stress on the overall abilities of the vendor organizations to assure customers of competence; convincing buyer of selling firm's long-term capabilities and commitment (by conducting plant tours, circulating articles about vendor's technical personnel, describing vendor's strategic approach and level of technical commitment, and using image advertising); conveying competence (by using top management contacts, serving other substantial customers (especially technologically-advanced "showcase" customers), and describing the uses of products by these showcase customers); adopting long time horizons in vendor's marketing strategies; publicizing longer-term capabilities; and announcing planned product developments.

• Use the sales force effectively by coordinating flows of information from the account; collecting and using consistently and effectively as much information as is practical about individual accounts; effectively coordinating the inside salesperson and the service person provide information to the field salesperson handling the account; being aware of the importance of other vendor employees dealing with their customers; treating internal sources of information well; cultivating and developing relationships to maintain flow of information about accounts; informing sales force on marketing policies; using a sophisticated sales force to sell complex products; using teams to serve account rather than individual salesmen; rotating salespeople's assignments; using sales force to help groups of customers obtain additional value from generally applicable products; using sales force to support and make more concrete a vendor's general reputation for technical competence; the sales person acting as an effective manager of the lasting relationship by helping the customer plan for the long term, tailoring the vendor's offerings to the customer's needs, and in general working to create lasting links between the customer and vendor organizations; giving the sales force itself a somewhat longer time horizon than is typical in shorter-term transaction marketing.

• Use technological abilities effectively by using information technology (e.g., computers) to link communications closely to customer; providing sound products in a stream of technology over time; identifying suitable (future) technologies; developing products based on these technologies; designing marketing programs to correspond to customers commitment to a technology; emphasizes technical and R&D capabilities; emphasizing ability to translate technology into an ongoing stream of good products, to bring those products to market in a timely manner, and to give their existing customers relatively easy access to those products; convincing customers and potential customers of the soundness of the chosen technology and of its own firm commitment to that technology; convincing buyers to select its own specific products based on that technology; discussing technology in detail; demonstrating that a substantial number of credible vendors have committed to that technology; providing enough modularity to satisfy customer's focus on technology but also offer enough systems benefits to encourage purchases from that particular vendor; making products which are compatible with another particularly strong vendor; focusing commitment more on a common technology; making frequent technological changes; using of technical change to build customer confidence; and generally providing a continuing stream of up-to-date products.

• Use top management appropriately by top managers insisting that sales, marketing, product development, R&D, and other departments consider the individual account, the marketing mix, and time and being involved to ensure the necessary coordination of these efforts and to establish measurement systems consistent with overall longer-term goals.

• Create customer switching costs by providing own maintenance of product to prevent customer's learning; helping customer implement JIT inventory system; offering product use information and procedures which apply only to vendor's products; offering other forms of support, such as training in how to use the vendor's products, provided by other parts of the vendor's organization; identifying ways to help the customer use that vendor's products to reduce costs appreciably as part of a customer strategy of competing as a low-cost producer; trying to find ways to use the vendor's products to help a customer that competes on the basis of service to its own customers with faster response to their orders.

Implications for the SBSR Structural Model

In the previous section, a broad cross-section of theoretical, empirical, and normative/managerial perspectives on the buyer-seller relationship was reviewed and analyzed. This section describes the impact of these perspectives on formulation of the structural model of the SBSR.

Two somewhat competing major themes emerge from this examination of the literature. The first, which can be called the "structuralists'" perspective, is primarily grounded in institutional economics and prominently Williamson's Transaction Cost Economics theory (1975). This perspective emphasizes the importance of "idiosyncratic investment" as the principal driving force or motivator of the relationship. Given a certain set of conditions (including especially "specific assets" but also environmental uncertainty and ambiguity), this theory suggests that a "governance structure" (structural arrangement or mechanisms) emerges which determines the nature of the interfirm relationship. Governance structure factors include joint interfirm action and verification (Heide and John 1990). In this approach the focus is on the preconditions that encourage or even dictate formation of the relationship.

The other theme, which can be categorized as "behaviorist," emerges from the marketing tradition of seeking explanation in the behavior of firms (or individuals). This approach focuses on the actual *behaviors* in which firms engage in order to successfully implement the relationship. This perspective often draws from Macneil's transactional norms theory (1980). Norms are *behavior* rules—the expectations that participants from each firm have regarding one another's behaviors.

These themes are not mutually exclusive. Indeed, many relationship models incorporate elements of both (see for instance Heide and John 1992 or Dwyer et al. 1987). The distinction is largely a matter of emphasis. Which is judged to be the more important in describing and explaining the successful relationship: (a) the *situational elements* or (b) the *processes* which constitute the behaviors of the firm in the relationship? The "behaviorist" perspective is more proactive in character; the firm is viewed as having the capability to define and create its environment (i.e., the relationship). The "structuralists" perspective is more passive in character; the firm is seen to be largely subject to the situational forces that ordain the interfirm relationship.

The SBSR model tends to conform to the behaviorist or activists perspective. This model builds from and extends the relational norms perspective by focusing on understanding the importance of actual *behaviors* of the groups and individuals in the firm (within the context of the relationship). While a set of environmental forces is theorized to play a role in creating awareness (Dwyer et al. 1987) and motivating interest in the relationship (Frazier et al. 1988), the principal focus of the SBSR model is on the *processes* that constitute cooperation and coordination of the relationship. Two major process motifs are emphasized. The first, *cooperation*, as a behavioral construct, is the focus of the study. The literature was examined with particular attention as to the conceptualization and operationalization of this concept. The second process motif, *coordinating*, addresses those behaviors which facilitate or encourage the relationship. The literature (particularly the normative and prescriptive treatments) was examined for those specific coordination (management) mechanisms firms employ to assure a successful relationship. Consequently, the SBSR model finds its major implications in those models which focus on and elaborate actual relationship-based behaviors of firms.

A second major area of investigation of the SBSR model centers on examining the *strategic* bases of the relationship. Strategic considerations are theorized to comprise the primary motivating preconditions (objectives) and outcomes (strategic benefits) of the relationship. No single study or set of studies focuses on the strategic implications of relationship marketing. Varadarajan and Rajaratman's "symbiotic marketing" approach (1986) recognizes that symbiosis (collaboration or cooperation) originates primarily from strategic considerations. These strategic purposes can be achieved by a number of different growth approaches including diversification, acquisition and integration, as well as symbiosis.

Thus, in the examining the relationship marketing literature for insights which might guide the development of the SBSR model, particular attention was given to extracting concepts and relationships which involved these two primary concerns: process elements and strategic motivators and outcomes. Table 2.1 contains the primary insights gained from the literature review together with an outline of the implications for model development.

TABLE 2.1
EXPLANATORY MODELS AND THE SBSR

MODEL CONCEPTS	SBSR IMPLICATIONS
The IMP Group Interaction Model (Hankansson, 1982)	
• The relationship as a time dependent process • The environment as an interacting confluence of social and economic factors • Exchange as a dyadic process	Incorporation of a perspective that reflects both the history and futurity of the relationship; inclusion of interacting social, economic, and strategic factors.
Jackson (1985)	
• The supplier should try to create customer switching costs as investments in assets, people, and procedures • Supplier mitigates customer's sense of exposure by effective relationship building • Relationship marketing must involve top management, involvement of the full vendor	

(Continued)

MODEL CONCEPTS	SBSR IMPLICATIONS
organization, manage the marketing strategy as an ongoing process	
Recognizes importance of switching costs and exposure as part of the successful relationship; incorporates broad supplier involvement (multiple functional participation in the relationship).	
Schur (1986)	
• The supplier's product(s) have impact on the customer core technology and can be custom designed • Relationship management involves team selling, key coordinator, and involvement of top management.	Identifies strategic characteristics of involved products and importance of management (coordination) mechanisms to the success of the relationship.
Spekman and Strauss (1986)	
• Sharing technology, resources and expertise • Key situational variables which influence entry into the relationship (importance of the purchase, perceived uncertainty and perceived strategic vulnerability)	Underscores the role of technical and strategic information exchange. Identifies the importance of certain perceptions including uncertainty and strategic vulnerability (exposure).
Spekman and Johnston (1986)	
• Managing the selling and buying centers.	Recognizes the need to incorporate "coordination" of both the buying and selling centers (external and internal coordination).
The Relationship Development Process Model (Dwyer, Schurr and Oh 1987)	
• Primary objective of firms in the relationship is attainment of competitive advantage	Incorporation of strategic objectives and benefits; of mutual strategic dependence; of reciprocal exchange of strategic information as a component of cooperation.

(Continued)

MODEL CONCEPTS	SBSR IMPLICATIONS
• Firms seek to reduce uncertainty and manage dependence • Firms exchange intimate information • High levels of cooperation • Expectations of reciprocal rewards	
The JIT Exchange Relationship Model Frazier (Spekman and O'Neal 1988)	
• Relationship focuses on core products • Importance of joint exchange of functional product, production, and logistics) information • High levels of specialized investments • Joint problem solving involving large numbers of individuals and functional groups • Beneficial outcomes including reduced costs, reduced inventories, technological developments, and improved products	Examination of "important" products as essential to success; of exchange of functional information; of "intensity" and of interactions reflected in the numbers and types of participants; of importance of joint working to cooperation; of development of "switching costs;" and inclusion of a range of technical-, product- and cost-related outcomes.
Noordewier, John and Nevin (1990)	
• Interfirm cooperative behaviors involving supplier flexibilitu, willingness to provide assistance and the exchange of large amounts of information (proprietary, planning, technical) • Active supervision of the relationship by the supplier to assure relationship success	The multi-dimensional nature of cooperative behaviors; the need to coordinate/manage the relationship.
Industrial Purchasing Alliances (Heide and John 1990, 1992)	
• Expectation of continuity of the relationship • Joint action involving of relationship flexibility, information exchange, and solidarity • Essential role of cooperation involving key information exchange.	Expectations of continuity as potentially the paramount measure success.

(Continued)

MODEL CONCEPTS	SBSR IMPLICATIONS
Bonding Model of Long-Term Relationships (Wilson 1989; Wilson, Dant and Han 1990)	
• Outcomes include a combination of reduced manufacturing and operating costs, increased quality and productivity, and shorter development times • These outcomes result when the partners technically cooperate and establish high levels of mutual trust and commitment • Downside outcomes include sense of uncertainty due to dependence and possibility that a "better" alternative partner might be available.	Incorporation of multi-dimensional beneficial outcomes, trust, and perceptions of exposure loss of autonomy.

The Empirical Model of the SBSR

Correspondence of the SBSR to the Conceptual Framework

The structural model, portrayed in Figure 2.7, is patterned after the SBSR conceptual framework described in Chapter 1, as depicted in Figure 1.1. Conforming to the configuration of that framework, the SBSR structural model consists of the following three major components and their respective dimensions: (1) Situational Dimensions (Product Importance and Strategic Resource Dependence on the Customer); (2) Process Dimensions (Cooperation, Trust, Intensity and Coordination, and (3) Outcome Dimensions (Switching Costs, Strategic Benefits, Exposure, Loss of Autonomy, and Expectations of Continuity).

Consistent with interorganizational theory (Van de Ven 1976), this modeling approach assumes that a set of particular situational dimensions encourages the development and implementation of the interfirm relationship processes. In turn, certain outcomes will result from the implementation of the relationship processes. This modeling approach— situational elements impacting on process variables resulting in outcomes—corresponds to that expressed in social exchange theory (Kelley and Thibaut 1978), which suggests that external factors (corresponding to the situational dimensions) influence the nature of exchange (corresponding to the processes) and the nature of the outcomes between two individuals. Social exchange theory identifies several outcomes which emanate from the dyadic interactions of individuals that are important in maintaining the relationship: individual satisfaction, trust, and commitment.

SBSR theory combines organizational-level and individual-level variables. For example, organizational-level outcome variables include strategic benefits, switching costs, strategic and financial exposure, and loss of the firm's (marketing) autonomy. The interest in organizational-level variables stems from the strategic theme which underlies the theory.

Descriptive Overview of the SBSR Empirical Model

A set of specific propositions can be stated for the relationships among many of the dimensions outlined in the conceptual framework shown in Figure 1.1. However, in light of its complexity, all possible relationships between the framework's dimensions are not developed in the proposed model depicted in Figure 2.7. Instead, the structural model focuses on the dimensions and relationships of primary importance in explaining and understanding the SBSR.

The heart of the relationship model is a complex of interactive interrelationships among three central process constructs: interfirm functional interaction *intensity*, *cooperation*, and *trust*. The model's linkages do not reflect the interactional or reciprocal nature of these relationships. For practical analytic reasons, the causal flows are posited to occur in one direction only. Specifically, high levels of intensity are hypothesized to be associated with high levels of cooperation and trust (Frazier et al. 1988), and high levels of cooperation, with high levels of trust (Spekman 1988). The direction of causation between cooperation and trust is open to theoretical and empirical question; see Anderson and Narus (1990) and Dwyer et al. (1987).

The supplier's resource dependence on the customer provides the primary impetus for engaging in the relationship and cooperating with the customer (Frazier et al. 1988; Spekman 1988). The extent to which the firm pursues and nurtures the relationship -- the level of

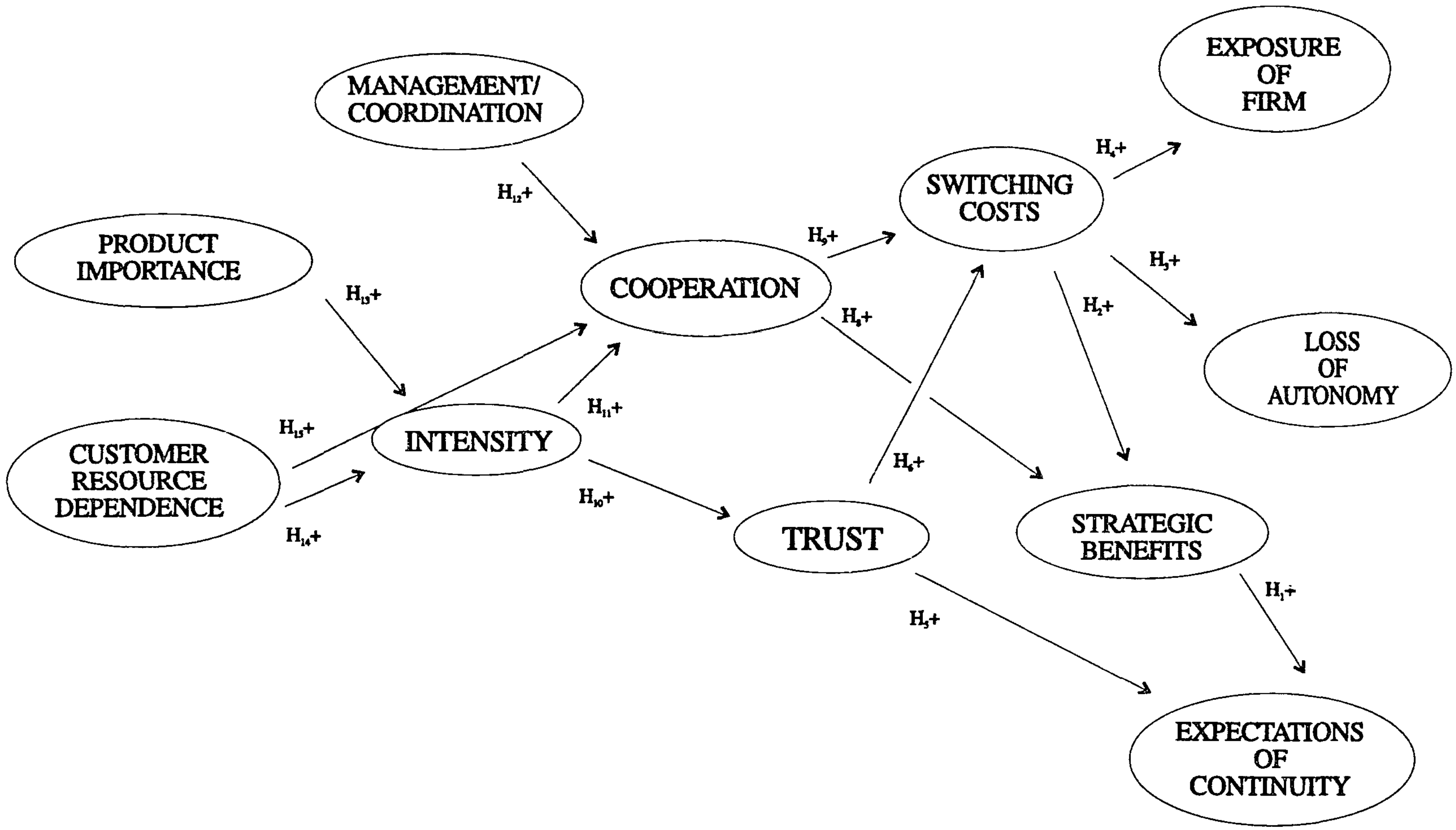


FIGURE 2.7
STRUCTURAL MODEL OF THE SBSR

functional interaction intensity and coordination -- is also a function of the strategic significance of the interfirm "project" reflected in the levels of product importance (Shapiro 1987a, 1988) or the size, stakes and complexity of the "issue" (Dant and Schul 1992). Relationship management and coordination nurture cross-company integration and communications at all functional levels (Shapiro 1987c; Schurr 1986). Consequently, high levels of cooperation are hypothesized to be associated with high levels of interfirm functional coordination.

The successful relationship will result in a combination of organizational- and individual-level outcomes. Open sharing and joint problem solving (i.e., cooperating), together with trust, will encourage investments in switching costs, which in turn, are related to the eventual realization of the desired competitive advantage or strategic benefits (Jackson, 1985). The strategic benefits are also an outcome of the degree of cooperation or collaboration established between firms (Spekman 1988; Shapiro 1987b). Expectations of the continuity of the relationship will emerge from achieving relational exchange (Noordewier et al. 1990; Jackson 1985; Spekman 1988) evidenced by realizing the desired strategic objectives. A sense of exposure and of loss of autonomy is likely to be effected by the investments in switching costs, acting as a barrier to exiting the relationship (Shapiro 1987b; Jackson 1985).

The remainder of this chapter details the development of the SBSR structural model— the major constructs are presented and the research hypothesis developed as shown in Figure 2.7

Expectations of Continuity

Expectations of Continuity refers to the expectations of future exchange between buyers and sellers. This concept may be viewed as the "ultimate" criterion variable for this model. It can reasonably be assumed that participants in a successful buyer-seller alliance would prefer to see it continue, and vice-versa. Supplier Expectation of Continuity can be defined as "the perceptions of the bilateral expectation of future interaction" (Heide and John 1990, p. 25). The definition involves anticipated duration into the future rather than the historical duration to date. This distinction is important because though expectations of continuity may be induced by past association, "the key issue is whether the parties expect to continue the exchange" (Axelrod 1984, in Heide and John 1990, p. 26).

Whereas conventional relationships are discrete or short-term events, based on distinct points of entry and exit, closer relationships tend to be continuous or open-ended: "organic solidarity consists of a common belief in effectiveness of future exchange" (Macneil 1980, p. 95). Buyers and sellers engaged in discrete exchange do not necessarily assume the continuation of their association. At this end of the relational exchange continuum, the parties expect that the "...transaction commences sharply by clear, instantaneous performance; sharp in, sharp out" (Macneil 1980, p. 89). "Spot sale" exchanges are examples of discrete exchange.

As transactions become more relational, they occur over longer periods of time, have less definite termination dates, and are generally neither sharp in nor sharp out. There is also a greater expectation of repeat business with the exchange partner. Several researchers (e.g., Jackson 1985; Joskow 1987; Spekman 1988) have described continuity as a key aspect of shifts toward closer purchasing relationships. Similar to joint action, this dimension is represented also in the research on interpersonal ties (cf. Kelley and Thibaut 1978). Furthermore, the anticipation of future interaction is considered to be a key element of services relational exchange (Crosby, Evans and Cowles 1990)

Exposure

Switching costs (described below) consider relatively more tangible relationship risks. There are also less tangible concerns: the risks that organizations and individual buyers face in relation to their choices of vendor or product. Jackson (1985) labels such risks *exposure*. The Supplier's Exposure refers to the supplier's perceptions of risk of aligning itself solely or largely with a single customer.

Actually both parties to an industrial marketing relationship face risk or exposure. Thus, exposure can be also defined as that which the two parties have at stake in the relationship (Jackson 1985). On each side, exposure affects both the organization and individuals within the organization. It includes issues of dollars invested (by buyer or seller) and of performance (whether products will work satisfactorily). It also involves reputations of organizations and of individual managers.

The marketing literature on risk and industrial buyer behavior emphasizes the importance of perceived risk—the exposure of individuals involved in procurement decisions (cf. Cox 1967). That literature also suggests that risk can be categorized as financial, performance, and personal. These three categories, which prove useful in examining the exposure of each of the parties to an industrial marketing relationship, are examined next.

Financial Exposure. Financial exposure for the supplier involves the risk it will not collect its receivables, an obvious form of financial risk. More frequently, a vendor faces the risk that its relationship with a specific customer will not be profitable—that is, that the revenues it receives from the customer (even if all the bills are paid promptly) will not cover the total costs of serving the customer, among them, the costs of products, the selling effort, service, and any unpriced support. Financial risk may also involve the financial assets invested in capital equipment (plant and distribution equipment) which is dedicated or specific to the customer. In this case it is conceptualized as a switching cost.

Performance Exposure. The vendor's performance exposure can be especially troublesome because individuals in the buyer's organizations frequently have key impacts on whether a product works as intended. Obviously, customers can use products incorrectly and therefore cause performance problems. In addition, customers' misperceptions about a product's capabilities can lead to disappointment when the product does not work as the customer mistakenly thought it would. Performance risk also addresses the possibility that the customer may fail to manufacture or market its product successfully.

Personal Exposure. Individual employees of the supplier may feel that they face an asymmetric reward structure; that they will be penalized more for bad news than they will be rewarded for good. The result can be considerable conservatism. Beyond feeling exposure to negative impacts on their careers, individuals are also influenced in dealing with customers by risks to the personal satisfaction they obtain from their jobs. For example, the literature on motivation of the sale force discusses the difficult of inducing field representatives to make cold calls on unknown potential customers. Even if their organizations strongly encourage such calls and in fact reward the effort, salespeople are often reluctant to face the likely rejection; it is tough not to take that rejection too seriously.

Actual and Perceived Exposure. Both customers and vendors face numerous and complex types of exposure or risk. A typical relationship involves a mix of types. Moreover, not only are intangible switching costs complex and important, but in addition, buyers and sellers may not even be aware of some of the risks they face. In other words, the supplier's or customer's actual exposure may be considerably different from its perceived exposure.

Loss of Autonomy

Relationships have both costs and benefits for each partner: "Indeed close relationships between industrial buyers and sellers are appropriate only if the benefits and advantages outweigh the problems" (Wilson, et al. 1990, p. 10). One of these costs, the the opportunity costs of foregone exchange with alternative partners, is perhaps the most important (Dwyer et al 1987). The opportunity cost of any particular course of action is the amount of gain which could have been obtained by pursuing the next most desirable alternative (Liebhafsky 1968).

A close relationship with a customer may inhibit other customers, who are competitors of the partner-customer, from considering transacting with the supplier. Questions of trust and the possibility that the close relationship might induce the supplier to provide competitive information to the relationship partner and favor it in other ways, could prompt the prospective customer to "think twice" before transacting with that supplier. Thus the supplier is potentially constraining itself from engaging with better exchange alternatives in the future (Wilson et al. 1990). The concept Loss of Autonomy refers, therefore, to the supplier's perception that, it has constrained its future customer alternative supply options (reduced autonomy or lost opportunities) by having entered into the relationship.

Strategic Benefits

According to this SBSR theory, Strategic Benefits are the *raison d'etre* of the relationship. Firms are theorized to enter into and stay in the relationship because of the anticipation, or actual attainment, of strategic benefits. The term, *strategic*, in this context refers to decisions and actions of the firm that (1) have a major impact on the business unit, require significant resource commitments, and are not easily reversed (Buzzell and Gale 1987), and (2) set long-term direction by matching its products, markets and technology (Hofer and Schendel 1978). The purpose of corporate strategy is to create sustainable competitive advantage through one (or a combination) of three major "generic" strategies: differentiation, low cost, or focus (Porter 1985). From an industrial marketing perspective, differentiation is achieved through superior performing or higher quality products (reduced impurities, tighter specifications) and low cost through more efficient or higher yielding manufacturing processes and/or more efficient logistics systems (Shapiro 1988; Derose 1991). The SBSR partners seek to achieve strategic advantage by focusing on the customer's customer by combining resources—the supplier's and customer's—to better serve end-use markets.

The term Strategic Benefits refers, therefore, to outcomes of the relationship related to achieving strategic and/or operational gain or competitive advantage. Examples of these gains, which will tend to be longer term in nature (as opposed to the short-term negotiated price benefits of "arms length" transactions), include improved levels of on-time deliveries and acceptable product (Noordewier et al 1990); long-term contracts and increased revenues (Schurr 1986); higher quality, more innovative, and lower cost products (Frazier et al. 1988); and enhanced technological understanding (Shapiro 1988).

Thus, strategic benefits represent the primary organizational-level measure of the relationship's effectiveness. The achieved (or anticipated) effectiveness of the relationship is likely to be a determinant of the participants' expectations that the relationship will continue into the future—that it will endure over time: "A persevering relationship...presumes that the parties can discern the benefits attributable to the exchange relation and will abet continued effective exchange. Given these expectations, the parties can bond themselves in such a way as to encourage their continued investment in the relationship" (Dwyer et al. 1987, p. 19). Conversely, if achieved rewards (benefit outcomes) compare poorly to deserved and expected rewards, the relationship partner will be relatively dissatisfied with the exchange (Frazier 1983).

Crosby, Evans and Cowles (1990) suggest that (in the services context) "successful exchange episodes...eventually lead to an enduring buyer-seller relationship" (p. 68). Their study demonstrated that anticipation of future interaction was positively related to relationship quality, where the concept relationship quality includes the notion that the salesperson can be relied on to behave in such a manner to best serve the long-term interest (i.e., enhance benefits) of the customer. Furthermore, the willingness of firms to invest in switching costs (which serve to generate strategic benefits or competitive advantage—see below) was found to be positively associated with the buyer's and seller's expectation of continuity of the relationship (Heide and John 1990). Finally, Noordewier et al. (1990) demonstrated that purchasing effectiveness (measured as the percentages of on-time delivery and acceptable product) of OEM-purchasing firms was higher in the condition in which the respondents expected their relationship with the supplier to last a long time. These observations and empirical findings concerning the importance of the success of the relationship to the participants' desire to see it continue lead to the first hypothesis:

> **H1: The supplier's level of Expectations of Continuity will be positively associated with the level of its achieved or anticipated Strategic Benefits.**

Switching Costs

Both parties to the relationship invest in it over time. Suppliers invest in their relationships with the relationship partner in a variety of ways: they spend sales time and technical services attention on the customer; they may tailor products or services to fit the buyer's specific needs; they may provide applications engineering, maintenance, or they may invest in plant or other capital equipment which is largely "dedicated" to that customer. Customers also invest in their relationships with suppliers in a variety of ways: they spend money on the vendor's products or services; they may hire or train people to use the vendor's offerings; they may invest in facilities and equipment or other lasting assets to work with or use the vendor's offerings; they may change or create operating procedures to allow them to work with a vendor and its products and services; they may invest in training the vendor's representatives so that the seller will be able to serve the customer better; and so on.

Those human and physical asset investments (tangible and intangible) required to support exchange and which are specialized to the exchange relationship have been referred to as transaction-specific investments (Williamson 1975). If the relationship were to be terminated, the value of these assets would be largely lost because their salvage value outside the relationship is very low. Specific investments are "investments (that have) considerably less value outside the focal relationship" (Heide and John 1990, p. 27). Such nonredeployable assets can also be thought of as creating *switching costs* (Jackson 1985; Porter 1980). Switching costs are the key to understanding the differences between "always a share" (transactional) and "lost for good" (relational) customers (Jackson 1985).

Switching costs can involve three kinds of investments:

(1) Investments in people;

(2) Investments in lasting assets; and

(3) Investments in procedures (Jackson 1985).

Therefore switching costs (or transaction specific investments) can be defined as investments made in either in durable assets (e.g., production facilities, tooling costs) or human assets (e.g., expert knowledge), that are highly specialized to the buyer-seller relationship, are not redeployed easily, and/or have very little salvage value should the relationship cease to continue (Spekman and Strauss 1986).

Transaction cost economic theory (Williamson 1975) views specific investments as a principal factor evoking shifts toward bilateral governance structures (Heide and John 1990). Frazier et al. (1988) theorize that the *existence* of specific investments is a primary factor that leads firms into the early stage of searching for and evaluating potential relationship partners. The presence of these costs poses a problem for the investing party because their value depends on good-faith behavior or forbearance by the other party. This TCA-based viewpoint has been questioned and criticized by numerous theorists (for example, see Perrow

1986). Specifically, its behavioral assumptions of opportunistically inclined parties has been criticized frequently for being overly simplistic.

The SBSR perspective on switching costs departs from that of TCA-based relationship theories. SBSR theory posits that switching cost investments are made by the relationship partners for the purposes of achieving the desired strategic benefits. Switching costs are regard as an outcome of the successful implementation of the relationship. In short, firms in relationships are willing to make investments in switching costs (a) when they can see or anticipate the strategic or operational benefits of doing so and (b) when they have sufficient experience (trust and cooperation) in the relationship to sanction such decisions.

This point of view conforms to Jackson's (1985) perspective that the industrial marketing relationship is really an evolving pair of commitments by two parties over time. The paired commitments change as the products change, as the ways the products are used change, and as the methods of selling the products and supporting the relationship change. Numerous factors are judged to influence the firm's willingness to invest in switching costs. They are particularly willing to do so when "they expect high benefits from the products" (Jackson 1985, p. 44). This view is also mirrored in the observation by Ford (1980) that the "adaptations which companies make to suit each other...(cause) their respective products, production and administrative processes (to) become more closely matched with each other. This produces consequent savings for one or both parties" (p. 345). (To the best knowledge of this author there are no studies which specifically examine the association of specific assets to strategic benefits. In fact, there are few empirical studies which examine the level of strategic or operational benefit (performance) outcomes of the relationship in any context. Most tend to focus on the psych-social state outcomes such as satisfaction or commitment.)

These observations concerning the willingness of firms to invest in switching costs to achieve anticipated performance outcomes of the relationship lead to the second hypothesis:

H2: The level of supplier Strategic Benefits is positively associated with the level of supplier Switching Costs.

In addition to its impact on benefits, switching costs can have an impact on a relationship's other costs as well. Two such costs are examined in the SBSR model: Exposure and a Loss of Autonomy. Exposure has been defined (above) as the supplier's perceptions of risk of aligning itself solely or largely with a single customer or as what it has at stake in the relationship. The supplier risks loosing financial assets, organizational (firm) reputation, or individual (personal) reputation if the relationship fails. This risk or sense of exposure may be enhanced by high levels of investment in the relationship, particularly if this investment is transaction-specific or not redeployable.

Spekman and Strauss (1986) suggest that a company increases its risk when its control over resources (durable or human) has shifted to its exchange partner. One such control shift, according to these authors, is created when the firm invests in transaction specific assets. They hypothesize an association between the level of such investments (switching costs) and the firm's perceived strategic vulnerability, a psychological state (very much like perceived Exposure) in which a participant in the relationship perceives that his company is at risk or has severely limited its strategic options.

Heide and John (1988) posit a relationship between a firm's level of transaction specific investments and its dependency, where dependency is conceptualized as the difficulty involved in replacing the incumbent exchange partner. Dependency is perceived to be great when replacement of an exchange partner is difficult and there are few potential alternatives. Heide and John argue "that transaction-specific assets create dependence, which is described by the extent of the replaceability of the exchange partner" (1988, p. 24). This conceptualization dependency is similar to the concept of a firm's sense of exposure: both are perceptions of the risks attendant with a close alliance with a given partner-firm.

Accordingly, the following hypothesis is offered:

H3: The level of Firm Exposure is positively associated with the level of Switching Costs.

The level of perceived Loss of Autonomy may also be related to the switching cost investments of the supplier. Alternative customers may view the relationship as an obstacle to associating with the supplier. As Ford points out, "The existing relationships between buying and selling companies in an industrial market are a powerful barrier to entry of another company. The barrier consists of the inertia in existing relationships, the uncertainties for the customer in any change of supplier, the distance which exists between buyer and a potential seller, and the lack of awareness or information about possible alternative partners" (1980, p. 350). A supplier who recognizes the existence of this potential barrier is likely to perceive a loss of autonomy. That perception is theorized to be elevated if the relationship involves high levels of switching costs. The supplier is may judge that potential alternative customers would be aware of such investments, further constraining their (the customers') interest is future dealings.

Dwyer et al. (1987) suggest that the firm's anticipation of high switching costs promotes its interest in maintaining a quality relationship. It seems reasonable to assume that a "quality relationship," would be widely recognized in the industrial marketplace. Potential customers, who are competitors of the partner-customer, would no doubt be quite familiar with this alliance (which would involve high levels of switching costs). If so, they may be unwilling to entertain an association with the supplier, thus constraining or limiting the supplier's autonomy.

Accordingly, the fourth hypothesis is offered:

H4: The level of Switching Costs is positively associated with the level of Loss of Autonomy.

Supplier Trust

In general, the concept of trust can be examined at three different levels or contexts: interpersonal dyads (individual-to-individual); personal selling dyads (individual-to individual); and interfirm buyer-seller dyads (organization-to-organization). While the focus of this study is on organizational-level trust, insights gained from an understanding of trust in the other contexts is instructive. These insights and will be briefly reviewed next.

The importance of the concept of trust to interpersonal dyads has been extensively examined and is widely recognized (Pruitt 1981; Schlenker, Helm and Tedeschi 1973). Trust is regarded as both an emotional and cognitive state in which an individual relies upon information received from another person (Swan and Nolan 1985). In this context, trust has been defined as "the belief that a party's word or promise is reliable and a party will fulfill his/her obligations in an exchange relationship" (Rotter 1967, p. 651). In the interpersonal domain it has been concluded that trust leads to constructive dialogue and cooperation in problem solving, facilitates goal clarification and serves as a basis of commitment to carry out agreements (see Schurr and Ozanne 1985). Trust has been shown to be related to liking (Rotter 1980), perceived altruism (Frost, Stimpson and Maughan 1978).

In the area of personal selling, trust is especially critical (a) in reducing uncertainty and positively influencing the probability of a sale (Alessandra, Cathcart and Wexler 1988) and (b) in facilitating the selling effort when risk and incomplete information confront the buyer (a common characteristic of many purchase situations) (Hawes, Mast and Swan 1989). It has been shown to play a role in building buyer commitment (Prus 1987) and in developing and maintaining long-term relationships (Bigus 1972).

Care must be taken, however, in trying to extrapolate personal, individual-level trust to firm-level trust. In the former, individuals expose themselves; in the latter, the firm's resources are exposed. Trust in the interorganizational context of partnerships, therefore, entails less intensity and personal commitment (Anderson and Narus 1990). Trust, in the industrial buyer-seller context, has been defined as "the firm's belief that another company will perform actions that result in positive outcomes for the firm, as well as not take unexpected actions that would result in negative outcomes for the firm. The strength of this belief may lead the firm to make a *trusting response or action*, whereby the firm commits itself to a possible loss, depending upon the subsequent actions of the other company" (Anderson and Narus 1986, p. 326).

For this analysis, trust is an attitudinal concept that refers to the supplier's perception of the customer's ability, character, and strength. Having trust means that the supplier is confident that the customer *can* and *will* do what it promises -- it can rely on the customer. As suggested below (in the next section), trust is dynamic, it evolves and increases with positive buyer-seller experience. Trust is demonstrated by the honesty, sincerity, and reliability of the partner and by the diminished need to monitor and be cautious in dealings. A partner accepts the word of the other and is not skeptical of the other's motives.

In their empirical study of buyer-seller relationships, Wilson et al. (1990), concluded that mutual trust "by far was the most important factor that, according to both buyer and sellers, characterized a good relationship" (p. 7). In buyer-seller relations trust is crucial because its presence facilitates the relationship while its absence is a hinderance. Trust may be, therefore, an important determinant of the supplier's expectations of continuity of the relationship (desire or interest in maintaining and expanding the relationship) and in its willingness to assume the risks attached to investing in switching costs.

In their study of services buyer-seller relationships, Crosby et al. (1990) investigated the impact of "relationship quality" on various features of the relationship. The term, relationship quality, refers to a higher-order construct composed of two dimensions: trust and satisfaction. These authors determined that the level of relationship quality had a significant influence on the customer's anticipation of future interaction with the salesperson. The trust component of relationship quality may contribute to a lasting bond by offering assurances to the buyer that the salesperson would not knowingly distort information or otherwise subvert the customer's interests.

In a simulation study of industrial purchasing, Schurr and Ozanne (1985) found that buyers' expectations about trust and bargaining stance significantly affected attitudes and behavior toward their current supplier. Low trust stimulated less favorable attitudes, communications, and bargaining behavior. Furthermore, in studies of buyer-seller relations, trust has been shown to have a significant impact on satisfaction (Anderson and Narus 1990) and to be a significant component of commitment (Anderson and Weitz 1987).

These observations regarding the impact of trust on the anticipation of future interactions (creating lasting bonds) and on creating favorable buyer-seller attitudes (including commitment and satisfaction) lead to the next hypothesis:

H5: The level of the supplier's Expectations of Continuity is positively associated with the level of Trust in the customer.

Trust is considered to be extremely important in any exchange, but especially in relational exchange because of the *investments* and *commitments* by each side (Frazier et al. 1988). As Williamson (1975) notes, "Other things being equal, idiosyncratic exchange relations that feature personal trust will survive greater stress and will display greater adaptability" (p. 3). A reasonably high level of trust is likely to be present between the supplier and the customer before the relationship is engaged. If the relationship grows and evolves through positive experience, as tangible evidence of personal integrity accumulates, promises are upheld, and opportunistic behaviors are forgone, trust is enhanced (Frazier et al. 1988). Dwyer et al. (1987) suggest that firms that have developed strong trust in a relationship are more likely to work out their disagreements amicably and, in fact, accept some level of conflict as more or less routine. The prospect of handling problems amicably may incline firm to make investments which entail risk.

In summary, these observations underscore the importance of the role of trust in alleviating concerns or fears about future conflicts, problems and stress. Taken together they suggest that a relationship supplier might be more inclined to accept the risks attendant with investments in switching costs given a relatively high level of trust in its partner. These conclusions lead to the sixth hypothesis:

H6: The level of Switching Costs is positively associated with the level of supplier Trust in the customer.

Cooperation

While cooperation is perhaps the most widely discussed concept in the buyer-seller relationship literature, there is little apparent unanimity on its conceptualization. This is ironic because cooperation may represent the very essence of the relationship: "Cooperation reflects the firms' ability to collaborate and work together in a joint fashion toward their respective goals" (per Stern and Reve 1980). The concept encompasses those process elements of the relationship which represent the willingness of the partners to extend exchange beyond the limits imposed by the discrete or "arms length" approach.

In this study, the cooperating refers to working with others for mutual benefit. Cooperation has been related to conflict, although the nature of the relationship is unclear (Anderson and Narus 1984). A number of researchers view conflict and cooperation as opposite ends of a continuum where conflict represents "manifest conflict, whereby conflict can be defined as the frequency and intensity of disagreements between the distributor and manufacturer" (Anderson and Narus 1984, p. 66). Thus, cooperation may be conflict "reflected."

Cooperation is not unlike the Macneil's (1980) relational norms (planning and consent, solidarity, mutuality, flexibility, role integrity, creation and limitation of power and harmonization of conflict). These (inductively derived) norms are intended to capture the elements of exchange which are important in describing relational, as opposed to discrete, exchange (Kauffman and Dant 1991). A major difference between this study's conceptualization of cooperation and Macneil's formulation concerns the differences between behaviors and norms. This study focuses on actual behaviors, not on expectations or anticipations of behaviors (norms). As such, this formulation is consistent with Anderson and Narus' (1990) definition of cooperation: "similar or complementary coordinated *actions* taken by firms in interdependent relationship to achieve mutual outcomes or singular outcomes with expected reciprocation over time" (p. 45, emphasis added).

Macneil conceptualized his norms as a gestalt—he intends that they be taken together as a composite. Similarly, Heide and John (1992) conceptualize the three elements of their "supportive norms" (p. 33) (flexibility, information exchange, and solidarity) as a "higher order relational norm" (p. 36). Noordewier et al. (1990) refer to five governance elements of purchasing relationships as working together in a "relational syndrome" (p. 84). Though elements are discussed independently of one another, it is clear that they are related. As Stinchombe (1985) has argued persuasively, the elements tend to support one another and thus constitute a syndrome of functionally related elements. Thus, the relational norms are widely regarded as working together in unison; although each is separate, they tend to function together.

This study's conceptualization of cooperation is consistent with the convention of viewing norms as a gestalt -- as a relational syndrome. Four dimensions of cooperation are identified: (1) Resource/Information Sharing, (2) Joint Working, (3) Harmony, and (4) Flexibility. Though these dimensions represent distinct elements, they are theorized to reflect a single, higher order relational behavior construct called *cooperating*. The relational behavior second-order construct, cooperating, gives rise to four first-order factors representing these four dimensions. Each will be discussed next.

1. Resource Sharing refers to open sharing and exchange of strategic resources and especially strategic and technical information.

All purchase transactions involve information exchange. However, the quantity and type of information buyers provide vendors vary greatly. At the discrete end of the continuum, buyers are concerned with minimal amounts of information, consisting typically, of product specifications, prices, delivery schedules, and the like. However, as firms move away from this end, other types of information begin to be communicated, particularly long-term forecasting, proprietary, and structural planning information, including future product design information, production planning schedules, and so on (Palay 1984).

Communications between partners (information sharing) can be defined as "the formal as well as informal sharing of information or meaning between the distributor and the manufacturer firms" (Anderson and Narus 1984, p. 66). Information exchange defines a bilateral expectation that parties will proactively provide information useful to the partner (Heide and John 1992). It represents a safeguard to the supplier in the sense that the buyer can be expected to provide unforeseen information that may affect supplier operations. The expectation of getting all known information on an ongoing basis enables the supplier to cope better with the vulnerability associated with transferring decision control to the buyer. It is information about production scheduling, design requirements, and the like that attenuates these risks.

2. Joint working refers to joint or mutual decision making and problem solving.

Joint action can be defined as "the degree of interpenetration of organizational boundaries" (Heide and John 1990, p. 25). Joint action in industrial purchasing relationships can occur over a large set of activities, including tool development and product design (Drozdowski 1986), value analysis and cost targeting (Dowst 1988), design of quality control and delivery systems (Treleven 1987), and long-term planning (Spekman 1988). "As the extent and scope of joint activities increase, the firms effectively become partners in an alliance" (Heide and John 1990, p. 25).

According to March and Simon (1958), when problem solving is evident, the participants to the dispute are seen as *a priori* sharing common objectives and involving themselves in a high risk but integrative process of identifying a solution that satisfies both parties' decision criteria. Though not prerequisites to problem solving, trust and cooperation between parties are likely to be evident (Clopton 1984). Problem solving focal activities include the assembling of information, potentially involving such coordinative behaviors as open and accurate exchange of information about goals and priorities, concessionary behaviors, and continual evoking of new alternatives (Pruitt 1981; Pruitt and Lewis 1975).

3. Harmony refers to not using overt power to resolve differences; settling disagreements amicably and harmoniously.

Harmony is the judicious use of power. Like the concept, forbearing (Buckley and Casson 1984), this concept suggests refraining or abstaining from "taking advantage" of the other partner, of foregoing the opportunity to exploit the other. Forbearance is the opposite of opportunism (Williamson 1975)—not acting in "good faith," distorting data, obfuscating issues, and otherwise confusing transactions or exchanges.

4. Flexibility refers to the willingness of each partner conform to changes in the environment (Kauffman and Dant 1991).

Flexibility "defines a bilateral expectation of willingness to make adaptations as circumstances change" (Heide and John 1992, p. 35). From a supplier's perspective, it represents insurance that the relationship will be subject to good-faith modification if a particular practice proves detrimental in the light of changed circumstances.

Suppliers are often called upon to react to unforeseen (and unforeseeable) changes—contingencies that could not have been predicted beforehand. This element defines the flexibility displayed by suppliers toward buyer-requested adjustments to the extant relationship (Noordewier et al. 1990). Buyer requests for adjustments (in price, maintained stock levels, emergency deliveries, etc.) constitute opportunities to display flexibility. At the discrete end of the continuum, buyers expect the terms of exchange with suppliers to be binding and specific Macneil (1981). As firms move away from this extreme, buyers expect suppliers to display more flexibility in response to requests for changes.

In summary, cooperation is a complex concept which lies at the heart of the relationship process. The level of cooperation is no doubt influential on any number of the constructs portrayed in the structural model (Figure 2.7). The SBSR theory focuses on its potential impact on three key variables: trust, strategic benefits and switching costs.

The direction of causation between cooperation and trust is open to theoretical question. For instance, researchers do not agree on the direction of the linkage between communication and trust. Dwyer et al. (1987) hypothesize that trust fosters communication, whereas Anderson, Lodish and Weitz (1987) contend that communication leads to trust. SBSR theory posits that the relationship is an iterative process (see Chapter 1). The initiation of the relationship process is based on a certain level of "beginning" trust. In subsequent periods successful cooperative experiences lead to the development of higher levels of trust. Since the SBSR is a static model of the relationship, this study posits that at any one point in time, cooperation causes trust.

In other words, this study suggests that trust can be "earned." Building of trust is a crucial element in social exchange theory (Emerson 1976). Social exchange is a process that evolves over time as the actors mutually and sequentially demonstrate their trustworthiness by committing themselves to the relationship. One means of expressing commitment in the interfirm relationships is to make interfirm adaptations (in product, process, and so forth) (Hallen et al. 1991).

According to Dwyer et al. (1987), "direct experience is likely to be the "principal basis for judging trustworthiness in the exploratory phase (of the relationship)" (p. 18). For example, in the selling context measure that engendered buyer trust include the seller's demonstration of competence, dependability, responsibility and likeabilty (Swan, Trawick and Silva 1985). In some situations expected outcomes may not materialize from the relationship because of forces beyond the partners' control. Even in these instances, trust will be maintained if the firm believes its partner has taken the expected actions (Anderson and Narus 1990). In their study of relationship quality in services selling, Crosby et al. (1990) demonstrated a positive association between relational selling behaviors (a construct akin to cooperation) and relationship quality (which includes the trust construct).

The observations concerning the development of trust over time resulting from cooperative actions and measures taken by the firm's partner suggest this hypothesis:

H7: The level of supplier Trust in the customer is positively associated with the level of Cooperation between buyer and seller.

The relationship of performance outcomes (strategic benefits) of the relationship to the level of cooperation is widely recognized in both the buyer-seller relationship and channels literatures. For example, Frazier et al. (1988) theorize that cooperation can result in lower costs, improved products and technology, leading to increased revenues and profits. Frazier (1983), in the area of channel relationships, theorizes that the extrinsic rewards of cooperation include increases in market share, sales volume, and profits. According to Shapiro (1988) an industrial strategic partnership which features a joint development effort, information exchange, organizational integration, and a carefully developed sales agreement will result in an exchange of knowledge including "soft" management skills and "hard" technological ability.

The primary advantage of each partner in the relationship, according to Sethuraman, Anderson and Narus (1988), is to contribute to the competitive advantage that both partner firms share in the final customer marketplace. *Complementarity* appears to be the primary element for a strategic alliance (relationship) to succeed (Harrigan 1986). Complementarity can be described as the need of each firm to provide to provide the other with some requisite competitive advantage. By doing so, "the firms *jointly* attain a competitive advantage that each firm could not easily attain by itself" (Sethurman et al. 1988, p. 330). This mechanism is not unlike the concept of symbiosis (Varadarajan and Rajaratnam 1986) (described above in the literature review) and shares features of the cooperation-strategic benefits linkage posited in this SBSR theory.

The causal impact of cooperation on performance of the relationship has received little empirical investigation. Noordeweier et al. (1990), in their study of repetitively purchased items in industrial buyer-seller relationships, demonstrated that purchasing performance was related to "relational norm syndrome" construct (a concept similar to this study's formulation of cooperation; see explanation above). Specifically, the existence of relational norms was positively associated with on-time deliveries and acceptable product, but was insignificant for inventory turnover.

These observations on the importance of interfirm cooperation on achieving the intended beneficial outcomes of the relationship partners suggests this research hypothesis:

> **H8: The level of Strategic Benefits achieved by the supplier is positively associated with the level of buyer-seller Cooperation.**

The willingness of the supplier to invest in switching costs may depend upon its level of cooperation with the customer. The process of cooperation involves working toward common and individual goals of its participants (see above). These goals are focused on achieving the desired strategic objectives (benefits) of the relationship. Since the switching costs are hypothesized to be directed toward the achievement of strategic benefits, the same process which gives rise to these benefits -- cooperation -- may also be instrumental in the willingness of the firms to invest in switching costs. Pruitt (1981) for example suggests that trust and a desire to cooperate with another party are closely related. A party cooperating with a trusted other is likely to take high-risk behaviors including making large concession that seeks reciprocation, proposals for compromise, unilateral tension-reduction actions and candid statements about one's motives and priorities.

Based on these observations the ninth hypothesis is offered:

H9: The level of supplier Switching Costs is positively associated with the levels of buyer-seller Cooperation.

Intensity of the Interfirm Functional Interactions and Exchange

The relationship implementation process begins when *exchanges* of products, services, and information occur, and ongoing *interactions* between each firm's representatives are initiated (Frazier 1983). How well each firm (and individual participant) carries out its role in the exchange and interaction process may be the most critical aspect of JIT exchange (Frazier et al. 1988). In industrial marketing, exchange and interaction will occur primarily with operating and technical *functional groups* of each firm (Shapiro 1987a), including R&D, engineering, manufacturing, marketing, sales, and purchasing.

In interorganizational theory, the term *intensity* refers to the amount and frequency of resource and communication flows between groups (Van de Ven 1976). The intensity of resource and information flows indicates the degree of activity of the social action system;

i.e., the strength of task-instrumental and maintenance activity (i.e., operating success) in the relationship. Intensity is a crucial aspect of interorganizational theory: "The defining criterion of an inter-agency relationship is the intensity of resource flows among agencies" (Van de Ven 1976, p. 33).

Thus, interaction refers to the means for achieving reciprocal exchange of resources/information between functional group participants of the relationship partners. The mechanisms of interacting include face-to-face individual and group (team) meetings between participants, letter and technical and other written reports, and phone calls. The intensity of the interactions refers to the extent to which these means are employed in the relationship.

Intensity is a key element of the relationship: "*Effort* concerns how much each firm puts into the relationship, their drive to reach goals and make the relationship successful" (Frazier 1983, p. 73). Since the intensity of the exchanges and interactions (among functional groups) is judged to be "the most critical aspect" (Frazier et al. 1988, p. 61) and the "defining criterion" (Van de Ven 1976, p. 33) of the relationship, it is likely to impact on other crucial elements of the SBSR model. Specifically, the level of intensity is theorized to be a determinant of the level of the two central constructs of the model: cooperation and trust.

Since relationship interactions take place at the individual level, attitudes, values, and norms are likely to develop over time. The development of primary personal relations (social interaction and communication) and important personal, noneconomic satisfactions occur during exchange and interaction (Dwyer et al. 1987). The more people and functional areas in each firm that become heavily involved in the exchange, the more likely it is that the foundation of the exchange is stable (Frazier et al. 1988). As Pfeffer and Salancik (1978) note, "The more each (firm) becomes enmeshed in the social networks of the other, such that there are overlaps in friendship networks and other business acquaintances, the more binding their friendship becomes, and the more stable and predictable it is likely to be" (p. 146).

Trust has been defined as "the firm's belief that another company will perform actions that result in positive outcomes for the firm, as well as not take unexpected actions that would result in negative outcomes for the firm" (Anderson and Narus 1986, p. 326). It has been described (above) as an attitudinal concept concerning the supplier's perception of the customer's ability, character, and strength, that is dynamic: it grows over time as the result of successful exchange experiences. Based on these observations about the nature and importance of intensity (its importance to the success of the relationship, to building stability and to developing social bonds) it seem reasonable to assume that it would impact on the level of trust. The more that participants from each firm successfully work together—interact—the more likely trust is to grow. Consequently, the following hypothesis is offered:

H10: The level of supplier Trust in the customer is positively associated with the level of Intensity of the interfirm functional interactions.

As the supplier and buyer relationship participants increase the frequency and number of interactions and exchanges, the level of cooperation may increase. Positive norm development is facilitated in part if large numbers of committed personnel are involved in the operation of the exchange (Frazier et al. 1988). According to Shapiro (1988), a true strategic account relationship must involve intense communication among many supplier and customer functions. The more that individuals and groups work together, the more willing they may be to share critical information, to harmoniously resolve conflicts, to jointly work on mutual objectives and problems, and to be flexible. This intensity-cooperation association may involve an interplay with trust; intensity, trust and cooperation probably interact iteratively (see above). As Shapiro (1988) notes: "Companies cannot do joint development without sharing intimate technological, design, and operating informational. Trust is a critical ingredient in the relationship because it enables the intimacy" (p. 5).

Thus the eleventh hypothesis is offered:

H11: The level of interfirm functional interaction Cooperation is positively associated with the level of Intensity.

Managing and Coordinating the Relationship

Coordination refers to those activities or behaviors involved in facilitating or fostering the interfirm functional interactions. The supplier can coordinate or manage the relationship at two different organizational levels: (a) within its own organization, called *internal* or intrafirm coordination, and (b) between firms directed toward the group project and interactions, called *external* coordination. An example of external coordination would be the use of a formal working agreement (interfirm exchange agreement) that serves to document the purposes of the relationships project, regulate its governance, and establish controls or guidelines on the treatment of proprietary or sensitive information exchanged.

Managing and coordinating the relationship are widely regarded as essential to its success. Shapiro (1988), for instance, notes that relationship must become "institutionalized" in order to succeed. Management is essential to the institutionalization process which involves superseding the relationship between any two individuals to become a "relationship between organizations" (p. 20). Frazier et al. (1988) assert that the management practices of monitoring and appraising the relationship performance are "critical, as they reinforce the collaborative, problem-solving nature of the JIT exchange" (p. 62).

The use of coordinating methods and processes may enhance the level of cooperation within the project functional group interactions. The greater the level of management and coordination of the relationship participants and groups, the more willing they may be to share critical information, to harmoniously resolve conflicts, to jointly work on mutual objectives and problems, and to be flexible. Coordinating and managing activities that are considered a crucial to the performance of the relationship include the involvement of top management (Shapiro 1988; Schurr 1986), the appointment of a key coordinator (Shapiro 1988), the appointment of project teams (Shapiro 1988; Schurr 1986), and the use of an interfirm exchange/working/secrecy agreement (Frazier 1983; Frazier et al. 1988).

Based on these observation regarding the importance of coordination activities to the quality and performance of the relationship, the following hypothesis is offered:

> **H12: The level of Cooperation of the functional group interactions is positively associated with the level of management and Coordination of these activities.**

Product Importance

Involvement in strategic relationships entails high costs (in organizational resources, exposure, loss of autonomy, and switching costs). Not all supplied (or purchased) products warrant partnerships (Spekman 1988). If the supplied (or purchased) product is moderately important to highly important to the firm, it will seek alternative ways of marketing (purchasing) that product. Therefore, interest in relational exchange is expected to be higher for such goods than for goods of low importance (Frazier et al. 1983). The interest level in the relationship is also related to the product objectives: the need to improve the price and quality; technological improvements and waste reductions. It would appear that a product lacking in strategic importance could not command sufficient interest to generate involvement a relationship.

Product Strategic Importance refers to the supplier's level of strategic interest and concern in the relationship-related product. It could be regarded as a ranking on strategic factors of the product relative to other products of the firm. Several factors may contribute to the level of product importance, including the volume level and the quality-criticality of the product (Spekman 1988), the expected extrinsic rewards (possible increase in market share, sales volume, and profits) (Frazier 1983), and the technological complexity and the need to maintain technical superiority (Shapiro 1988; Schur 1988). From the buyer's perspective, product importance may be determined by the proportion of the product's purchase cost to total purchases (of the firm) or to the degree to which production output is dependent on a particular raw material or component (Spekman and Strauss 1986). Thompson (1968) and Jacobs (1974) point to the transaction's impact on the firm's core technology as a way to assess product importance.

Technological considerations (which are typically long-term and strategic) may have more bearing on product importance than economic considerations (which are shorter-term, more transaction-related). Spekman and Strauss (1986), for instance, conclude that "financial considerations fade in importance as other measures of the *product's importance* to the firm's 'core technology' rise to the fore. This is not to say that cost, or purchase prices, is not a concern; rather, it highlights the fact that cost is less important as the critical (perhaps, even strategic) nature of the product becomes more apparent to the industrial buyer" (p. 36, emphasis added). Furthermore, empirical results (Lilien 1979; Anderson 1985; and Anderson and Coughlan 1987) suggest that hierarchical exchange tends to be used for products that are relatively complex and highly differentiated.

Dant and Schul's (1992) investigation of the impact of *issue characteristics* (size, stakes, and complexity) on channel members' use of conflict resolution mechanisms is instructive to the present study. Because of the one-to-one correspondence of (a) conflict resolution to cooperation and (b) issue characteristics to product importance characteristics, this perspective offers SBSR model insights into the impact of product importance on cooperation. *Issue size* is defined by the "substantive precedent which the settlement will establish" (Fisher 1964, p. 92). *Policy* issues, in contrast to *operating* issues, are more likely to involve substantive precedent and, thus, be of some substantial issue magnitude. Policy issues are theorized to induce franchisors to use strategies such as problem solving or persuasion.

Issue stakes denotes the potential financial implications (i.e., gains or losses) of the issues under dispute. A negotiator may choose high risk, integrative methods for high stakes disputes because a heightened involvement with such issues may justify investing more resources in the resolution process (Deutsch 1969; Pruitt 1981). Theorists point out that individuals will become more involved in disputes if the stakes are high (Thibaut and Kelly 1959). *Complex issues* are defined as entailing simultaneous subissues and/or multiple considerations that are diverse in content (Kolb and Glidden 1986). Evidence suggests that issue complexity permits the development of tradeoffs and commensurate concessionary behaviors requisite to integrative conflict resolution behaviors. It can be concluded that issue characteristics observed to be major policy, high stakes, and complex, cause or influence channel firms to use conflict resolution methods which feature resource-involved, integrative, problem-solving conflict resolution mechanisms.

These observations about the impact of product importance on the relationship behaviors of firms, together with those relating issue characteristics and conflict-handling behaviors, suggest that, given an "important product," a supplier would be inclined to engage in a relationship in order achieve its strategic objectives. Accordingly, the following hypothesis is offered:

H13: The level of interfirm interaction Intensity is positively associated with the levels of supplier Product Importance.

Supplier's Strategic Resource Dependence on the Customer

The resource dependence model as developed by Pfeffer and Salancik (1978) suggests that organizations respond to the demands of organizations that control critical resources. In this perspective firms in a business relationship can be expected to work closely together (e.g., cooperate and invest in switching costs) to the extent that they are dependent upon each other's resources. Pfeffer and Salancik (1978) argue that dependence comprises three elements. "First there is the *importance* of the resource, the extent to which the organization requires it,...second is the extent to which (the other party)...has *discretion* over the resource..., and third, the extent to which there are few *alternatives*..." (p. 45).

On the basis of these definitions, Heide and John (1988) distinguish four means by which dependence is increased: when (1) the outcomes obtained from a relationship are important or highly valued, the focal party is more dependent; (2) the outcomes from a relationship are comparatively higher or better than the outcomes available from alternative relationships; (3) fewer alternative sources of exchange are available to the focal party; and (4) fewer potential alternative sources of exchange are available.

Supplier Strategic Dependence on the Customer as conceptualized in SBSR theory conforms to the first interpretation: the supplier is hypothesized to highly value the resources or outcomes available from engaging in a relationship with the customer. This view is consistent with the definition of organizational dependence, the extent to which an organization needs external resources to attain its self-interest goals for a specified period of time (Van de Ven and Ferry, 1980). The same is true when the *magnitude* of the exchange itself is higher. Thus, a firm is considered more dependent on a supplier (or customer) when that supplier (or customer) provides a larger fraction of its business. Several authors have used this notion of magnitude and/or importance of exchange to describe dependence (e.g., Dickson 1983; El-Ansary and Stern 1972; Etgar 1976; Pfeffer and Salancik 1978).

Hallen et al. (1991), for instance, suggest that dependence, which is internal to the relationship, is represented by the items customer importance and supplier importance, measured as the customers's share of the supplier's total sales of the product and the supplier's share of the customers total purchases of the product. Product characteristics also are related to resource availability, as more complex products can be acquired only from a few suppliers, which increases dependence. Their study demonstrated a positive relationship between the supplier's dependence (on the customer) and its willingness to make adaptations (in products, production processes and inventory levels) beneficial to the customer-partner.

While conforming in general to this conceptualization of interfirm dependence, SBSR extends the notion. Because of the emphasis on strategic and technological importance of the industrial relationship (Shapiro 1987b), SBSR theory assumes that dependence has a longer-term, more strategic and technical component in addition to the economic-, volume- and market-share-related aspects. For example, a supplier might be vitally interested in information (a resource) concerning the customer's own customer's product application needs or the customer's production capabilities and limitations related to using the supplier's product. Consequently the Supplier's Strategic Dependence on the Customer refers to the extent to which the supplier firm perceives a need for resources available from the customer in order to attain its project-related strategic goals.

Dependence is internal to the relationship and is reflected in the importance and resource capability of the customer. A customer is important to the extent that it demonstrates long-term competitive strengths and provides the opportunity for substantial levels of revenues and profits. An "important" customer is likely to be a "Key Account," a large customer that comprises a disproportionately large percentage of the company's sales (Shapiro and Wyman 1981) (sales being a "resource" that the customer provides the supplier). The relationship may be employed by the marketing firm to better "cement" its position with this key account (Schurr 1986).

An important customer will be perceived as a long-term competitive force in its (the customer's) industry, as demonstrated (1) by its technical, marketing, and financial abilities (Shapiro 1988), and (2) by the extent to which the it is up-to-date technologically and its technological innovativeness (Spekman 1988). An important customer will also present substantial sales and profit opportunities to the supplier as evidenced by its level of revenues (for both existing and future products).

The customer's resource capability refers to the customer's ability and willingness to provide the needed strategic resources to the supplier within the relationship. A customer exhibits its resource capability when it is willing and able to exchange technical, operating, and market-related information across functional areas between the two companies (Spekman 1988).

Based on these observations about the importance of resource dependence and the firm's interest and willingness to engage in relational exchange, it seem reasonable to conclude that a supplier would be more inclined to intensely engage and cooperate fully with a customer it perceived as possessing the resources needed in order to attain its goals. Consequently, the following two hypotheses are offered:

H14: The level of interfirm functional Intensity is positively associated with the level of the supplier's strategic resource Dependence on the customer.

H15: The level of interfirm functional Cooperation is positively associated with the level of the supplier's strategic resource Dependence on the customer.

These fifteen hypotheses constitute the bases for empirically testing the SBSR theory proposed here. The next chapter, Chapter 3, provides the research methodology to be employed in order to implement the empirical investigation.

CHAPTER 3

RESEARCH METHODOLOGY

Chapter 1 introduced the conceptual model and outlined the purposes and contributions of this study. Chapter 2 provided the development and theoretical support of the study's hypotheses. This chapter outlines the research methods employed in questionnaire pretest and the full study. Specifically addressed are the study's research design, sample characteristics and size, data collection methods, development of the measurement scales, data analysis methods, and finally, the study's limitations.

Research Method

The overall purpose of this study was to develop and test a model of the industrial buyer seller relationship. This purpose suggested the use of field study research methods (as opposed to pure experimental design methods). The field study approach is appropriate when the researcher desires that the variables to exert their influence in a "natural" manner (Kerlinger 1973). Information is obtained from respondents in their "natural" setting based on actual experience.

The study is also cross-sectional in design. Empirical observations of buyer-seller relationships were obtained, at a point in time, from respondents representing a range of industries, companies organizational functions. A longitudinal research design would have been preferred on pure conceptual grounds given that buyer-seller relationship is in fact a time-dependent process. However, practical analytic considerations precluded the longitudinal approach (namely the length of time required for the investigation). Moreover other studies in the area (for instance, Heide and John 1990, 1992; Noordewier et al. 1990, and others) have employed cross-sectional studies.

An argument could also have been made for using qualitative research methods for this study. The qualitative approach, or the case study, is a suitable research strategy for organizational and management studies if conducted within prescribed guidelines (Yin 1984). For case studies, the components of the research design are the same as those for any scientific investigation, or application of the "scientific method": (1) define the study's problem; (2) state its' propositions; (3) identify its units of analysis; (4) describe the logic linking the data to the propositions; and (5) identify the criteria for interpreting the findings (Yin 1984). An extensive literature is available to guide the researcher in appropriate methods for using the case study (see for instance, Yin 1984; *Qualitative Methodology* 1983; and the special edition of the *Administrative Science Quarterly* 1979).

The use of qualitative, as opposed to quantitative, methods is of course, not without its problems. Two primary objectives guide scientific research: data integrity and "currency" (Bonoma 1985, p. 200). Data integrity refers to those characteristics of research that affect error and bias in research results. According to Bonoma, it is an amalgam of what is referred to as internal validity, statistical conclusion validity, or reliability. Currency pertains to the generalizability of the results. Specifically, it refers to the characteristics of research that affect the contextual relevance of findings across measures, methods, persons, settings, and time. Currency is akin to external or pragmatic validity (Bonoma 1979).

Research strives to satisfy both objectives, data integrity and currency. However, there is a tradeoff between the two in which low levels of data integrity are traded for the currency and contextual richness of what is learned, and vice versa. Qualitative research is generally better suited for attaining high levels of contextual richness, whereas the quantitative approach is superior in achieving high levels of data integrity. Thus each method is relatively beneficial with regard to its objectives. However, each method has costs as well.

The costs of performing quantitative research include the needs to precisely operationalize the research variables, to have a relatively large sample size, adherence to strict assumptions, and quantitative data for statistical power, and to have the ability to exercise control over persons, settings, and other factors to prevent causal contamination. The costs of qualitative methods, on the other hand, involve primarily the difficulties in interpreting the findings, in the data "analysis" stage (Yin 1984). Here, results and conclusions are very dependent upon "subjective," or descriptive interpretation. In fact, many researchers suggest using "triangulation" methods (combinations of subjective and quantitative approaches) in order to obviate the shortcomings of these subjective interpretation shortcomings (see for instance, Jick 1979; Green and McClintock 1985).

From a purely "scientific" point of view, either method is acceptable if performed under the prescribed strictures. These cost-benefit tradeoffs were weighed in the decision to adopt a quantitative approach for the current study. This researcher was also influenced by the sentiment voiced by Yin regarding undertaking the qualitative approach:

> None of these (qualitative) strategies is easy to use. None can be applied mechanically, following any simple cookbook procedure. Not surprisingly, case study analysis is the most difficult stage of doing case studies, and novice investigators are especially likely to have a troublesome experience. Again, one recommendation to the novice is to begin a case study career with a simple and straightforward case study, even if the research questions are not as sophisticated or innovative as might be desired. As experience is gained in completing such simpler case studies, the novice will become capable of tackling more difficult research (Yin 1984, p. 119).

The current study was judged to be far from "simple and straightforward," and therefore, unsuitable as a beginning effort by a non-experienced case study researcher.

Moreover, within the context of the current state of research in the marketing discipline, a much more established structure exists for guiding the novice researcher in conducting quantitative studies.

A final factor influenced the decision to use, specifically, linear structural equation modeling as the preferred quantitative approach. It has been argued (see Perrault 1992) that a primary advantage of LISREL is its ability to deal with a comprehensive set of estimation problems in researching applied marketing problems. Some researchers even suggest that LISREL be viewed principally as a heuristic estimation methodology rather than as a procedure that is primarily useful for statistical inference. Thus, given the desire to deduce managerial implications from the SBSR model proposed here, as well as investigating the validity of the proposed theory, LISREL would appear to ideally suited to serving both goals.

Characteristics of the Sample

The Sample Frame

The basis for selecting the sample firms (i.e., the sample frame decision) was guided by two primary considerations. The first was industry context -- the nature of the sample firms' products and markets. The study was designed to investigate buyer-seller relationships in which the supplier firms were involved in selling products to buyers who, in turn, would use those product their own manufacturing processes. That is, the products were specified to be intermediate products, and more specifically, component-parts or raw-and/or processed-materials. Moreover, the products should be technical products, those which require technology in their application at either the manufacturing or marketing level, or both. Firm location in the marketing channel was not a primary issue. The supplying firms were drawn from both the manufacturing and distributing levels.

The second sample frame selection consideration was accessibility of the firms and respondents to the researcher. Where possible, the assistance of cooperating industry associations was enlisted to facilitate access to firms and to encourage respondent participation. Numerous research proposals were submitted to industry associations including the National Association of Wholesalers (NAW), the Institute for the Study of Business Marketing (ISBM), the Chemical Manufacturers Research Association (CMRA) and the National Association of Purchasing Managers (NAPM). The NAW was selected from those associations who agreed to participate. Also, as a separate initiative, access to individual firms in the chemical industry was gained through a process of "networking" by the researcher. Sample firms, which met the product-market criteria described above, were selected from among the NAW affiliate groups and the chemical industry companies.

Sample Size

Sample size was dictated by the requirements of the analytical technique used in the study—structural equation modeling employing LISREL (Joreskog and Sorbom 1988). The ability of the LISREL fit function to detect departures of the data from the model is dependent on the sample size (in this study the fit function was based on the maximum likelihood estimator, or MLE). For too large samples, the test very often will indicate that the model should be rejected (Hair et al. 1992). A too small sample size can result in problems with nonconvergence and improper solutions (Anderson and Gerbing 1988). The minimum recommended sample size using MLE is 100 (Hoelter 1983). A sample size of 150, however, is recommended to obtain parameter estimates that have standard errors small enough to be of practical use (Anderson and Gerbing 1988). Thus, a target sample size of 150 was established. A total of 740 research questionnaires was sent out based on an assumed response rate of approximately 20 per cent.

Data Collection Techniques

The measurement instrument employed in the study was a self-report, written questionnaire mailed directly to individual respondents. The respondents were instructed to answer the questions with respect to an actual buyer-seller relationship with which they were knowledgeable and personally involved. The relationship could be ongoing or concluded.

Key Informant Considerations

The questionnaires were completed by key informants in supplier firms. The key informant method is a technique for collecting information in social or organizational settings by interviewing a selected number of participants (Phillips and Bagozzi 1986) which involves a number of research practice guidelines (John and Reve 1982). The informants are chosen not on a random basis but because they possess special qualifications such as particular status, specialized knowledge, or accessibility to the researcher. The choice of informant-respondent type is crucial since he or she must possess the requisite knowledge regarding the origins, operation, and outcomes of the relationship. Key informants in this study included individuals from several organizational functions including especially sales, marketing, general management, and purchasing. As a check on the informant selection, each questionnaire contained a self-report scale on the informants' degree of knowledge of and involvement in the firm's customer relations.

Survey Administration Strategies

The problem of nonresponse in mail surveys of industrial populations is a recurrent concern (London and Dommeyer 1990). A number of factors can explain low response rates in industrial and organizational settings. First, industrial respondents are likely to have gatekeepers (e.g., secretaries) who may discard the questionnaire before the potential respondent is able to see it. Second, people who receive questionnaires at the work place may be too preoccupied with their jobs to answer a survey. Third, some industrial populations may be reluctant to reply to a survey because of concerns with the lack of confidentiality or of divulging proprietary information. Finally, some companies have policies prohibiting employees' participation in surveys. Consequently, this study employed several survey administration strategies to help maximize response rates. These techniques are described next.

Questionnaire Design

Methodically developed survey construction is essential in the organizational survey process (Edwards and Thomas 1993). According to Dillman (1978) the main contributor to success of a mailed questionnaire is the design of the instrument itself. The formulation of the specific items is the beginning point in questionnaire design. A number of item-construction guidelines were followed in the questionnaire design. The items were written where possible in short, simple, declarative sentences. Everyday language or language familiar to a large majority of industrial marketing professionals was used. The readability level was kept high by keeping sentence and word length to a minimum.

The use of negatively worded items was also minimized. Negatively worded items may not be equivalent to the positive answer to a positively worded statement. Moreover, reverse-coded items can cause an artificial "dimension" to appear (in a factor-analytic solution) when as few a 10% of respondents fail to notice that a few items are opposite in meaning (Schmitt and Stults 1985). Negative item construction was used only when it "naturally" fitted the context of the question. Finally, care was taken not to write items which would be biased or leading or would require revealing firm-proprietary information.

The second major questionnaire design consideration is the sequence of the items. Consistent with prescriptions for constructing organizational attitudinal surveys (Edwards and Thomas 1993), this study placed all the items that measure a single dimension (or subdimensions) together into a homogeneous module. This grouping of items makes it easier for the respondent to determine what the survey is attempting to measure. Consequently, the instrument was divided into sections representing each major dimension (or group of subdimensions). To further intensify the advantages of dimension-grouped items, a brief description of each concept (construct) was provided at the heading of each section. The description was intended to reduce respondent aggravation by providing a logical reason for answering each section. In short, respondent involvement in addressing the questions was enhanced by providing a narrative which "walked" him or her through the questionnaire and provided relevance for each set of ensuing questions.

Note: There is a differing point of view on the issue of grouping items in questionnaires. In an effort to prevent the "halo" effect, some methodologists suggest that surveys mix items from different dimensions in order to "hide" the measured dimension (Landy 1989). The case for making the dimensions overt—for exploiting the halo effect—is that it results in greater internal consistency (Bartlett 1982). Also, survey respondents might give more accurate, well-thought out answers if they know precisely what dimensions the survey is assessing.

The third questionnaire design consideration in improving response rates is the survey length. Dillman (1978) suggests that mailed questionnaires of twelve pages in length with no more than 125 items can achieve response rates equal to those of shorter instruments. The final questionnaire in this study consisted of 8 pages and contained 160 items. The final consideration in survey construction is to produce a professional looking questionnaire which demonstrates a high level of researcher personal concern and seriousness. This was achieved by placing the questionnaire in booklet form (Dillman 1978) and by using a variety of graphic devices (narratives enclosed in boxes, shading, bolded subheadings, etc.) which were patterned on several commercially produced questionnaires.

The first section of the questionnaire was a description of the industrial buyer-seller relationship or partnership. This description was intended to help the respondent frame the idea or concept of a "relationship." Given this understanding of the concept, the respondent then answered the questions with reference to a relationship with which her or she is personally familiar and involved. The demographic section was included as the final section. A copy of the questionnaire is provided in Appendix A.

The Mailing

The packaging of the mailing is the second major strategic consideration in the survey administration. The cover letters were written on LSU letterhead following the four-part format suggested by Dillman (1978): (1) explanation of the study and its importance and usefulness; (2) explanation to the respondent why his or her response is crucial and that no one else's can be substituted; (3) promise of confidentiality; and (4) restatement of the usefulness of the study, a promise of the results, and statement of thanks. In those cases where NAW affiliate groups were involved, the cover letters referenced the support of the member organization. In the case of the mailings to chemical companies, the cover letters were individually addressed and personalized when possible. An addressed, stamped return envelope was also enclosed.

Follow-up

Follow-up with respondents is a crucial phase of the overall survey administration strategy. Two different methods were employed depending upon the survey group involved. In the case of the NAW affiliate firms a postcard mailing follow-up technique was used. The postcard, sent two weeks after the initial mailing, was a reminder to the respondent and offered another questionnaire if required. In the case of the chemical companies, selected respondents received follow-up phone calls encouraging completion and return of the questionnaires.

Proposed Scales

This section provides an overview of the measurement scales used in the pretest of the SBSR questionnaire. The conceptualization of each construct is briefly reviewed and its operational derivation described. Conceptual insights and evidence of reliability and validity of scales in past research are provided. Indicators from existing scales were employed where possible. However, many of the concepts investigated as part of this model had not been previously researched. Consequently, the operationalization of a majority of the constructs necessitated the development of new scales and items. A summary of the operational measures, their sources and reliabilities is provided in Table 3.1.

TABLE 3.1
OPERATIONAL MEASURES OF ORIGINAL PRETEST SCALES: SOURCES AND INDEXES/STATISTICS

CONSTRUCT	SCALE	ITEMS*	INDEX/STATISTICS
OUTCOME STATES			
Expectations of Continuity	Heide and John (1990)	4 (2)	Chi-square of 17.2, GFI of .95, alpha of .88.
	Noordeweir et al. (1990)	3 (2)	Factor loadings and t-values .88 (5.7), .73 (6.1), .37 (fixed value)
	New	(1)	
Loss of Autonomy	New; input from Dwyer et al. (1987)	(3)	
Exposure	New; input from Jackson (1985)	(5)	
Strategic Benefits	New; input from Frazier et al. (1988), Schurr (1986), Shapiro (1988), expert panel	(17)	

(continued)

CONSTRUCT	SCALE	ITEMS*	INDEX/STATISTICS
Switching Costs	Heide and John (1992)	6 (6)	Alpha of .81
	O'Hara (1992)	5 (3)	Alpha of .67
	New; input from Jackson (1985)	(9)	
PROCESS VARIABLES			
Trust	Crosby et al. (1990)	9 (5)	Alpha of .89
	Swan et al. (1988)	20 (4)	Alphas ranging from .67 to .88
	New	(2)	
Cooperation	New; inputs from Kauffman and Dant (1991), Heide and John (1990, 1992), Noordewier et al. (1990)	(17)	
Coordination	New; inputs from Shapiro (1980), Frazier et al. (1988)	(13)	
Intensity	New; objective measures	(7)	
SITUATIONAL VARIABLES			
Dependence on Customer	New; inputs from Schur (1986), Shapiro (1988), Spekman (1988)	(15)	

(continued)

CONSTRUCT	SCALE	ITEMS*	INDEX/STATISTICS
Product Importance	New; inputs frcm Shapiro (1988), Spekman and Strauss (1986), Spekman (1988), Jacobs (1974)	(24)	

* Number in parentheses refers to the number of items selected from indicated scale.

Outcome States

Expectations of Continuity. Continuity refers to the supplier's expectation of future exchange between the buyer and seller and is defined as "the perceptions of the bilateral expectation of future interaction" (Heide and John 1990, p. 25). Noordewier, et al. (1990) employed a three-indicator scale to measure expectations of continuity. The factor loadings (LISREL lambda coefficients) and t-values for each item were: 0.879 (5.7), 0.730 (6.1), and 0.366 (fixed parameter). Two of these items were selected for the questionnaire. Heide and John (1990) measured continuity with four items. Based on confirmatory factor analysis results, this scale evidenced a chi-square value of 17.23 ($p = .00$), GFI of .95, RMSR of .04, and alpha of .88. Two items were selected from this scale. The fifth item in the continuity scale was derived by the author.

Loss of Autonomy. Loss of autonomy refers to the supplier's perception that it has constrained its future customer alternative supply options (reduced autonomy or lost opportunities) by having entered into the relationship. Although considered to be a crucial cost consideration in terms entering into the relationship (Dwyer et al. 1987), loss of autonomy has not been previously operationalized. Consequently all items are the author's.

Exposure. Exposure refers to the supplier's perception of risk of aligning itself solely or largely with a single customer. Three types of exposure have been identified: financial, performance, and personal (Jackson 1985). Consistent with these types, this study has conceptualized risk at two levels, the firm's and the individual's, and the items reflecting these levels were developed by the author.

Strategic Benefits. Strategic benefits refers to outcomes of the relationship related to achieving strategic and/or operational gain or competitive advantage. Although widely recognized as crucial to the successful relationship (Noordewier et al. 1990; Frazier et al. 1988; Schurr 1986; Shapiro 1988), few studies have empirically investigated the importance of strategic, economic, and technical benefits or outcomes to the relationship. Noordewier et al. (1990), in their empirical study, used largely objective measures to gauge the dependent outcome variables representing the benefits of the relationship (the level of inventory turnover, percentage of on-time deliveries, and percentage of acceptable product). Consequently, the items used in the current study are developed by the author.

Switching Costs. Switching costs (also referred to as specific assets) are defined as investments made by the supplier in either durable assets (e.g., production facilities) or human assets (people and procedures) that are highly specialized to the buyer-seller relationship. A number of studies have operationalized this concept. Heide and John in two studies (1990, 1992) developed scales of supplier specific investments consisting of five and six indicators each, with alpha values of .90 and .81, respectively. Six of the items used in the questionnaire are adaptations of these scales. O'Hara (1992) used a five-item scale to measure asset specificity. O'Hara retained two items from the original scale and the reduced scale evidenced an alpha value of .67. Three items were selected from the original O'Hara scale for the present study. The balance of the switching cost indicators were developed by the author, based primarily on conceptual foundations found in Jackson (1985).

Process Variables

Trust. Trust refers to the supplier's perception of the customer's ability, character, and strength. Having trust means that the supplier is confident that the customer can and will do what it promises. Trust is demonstrated by the honest, sincerity, and reliability of the customer and by the diminished need to monitor and be cautious in dealing with the customer. This conceptualization emphasizes the supplier's perceptions of the customer trust at the organizational- or firm-level as opposed to personal- or individual level. Crosby et al. (1990), in the services marketing context, measured trust with a nine-item scale which evidenced an alpha value of 0.89. Five of these indicators were adapted and included in the SBSR questionnaire. Swan, Trawick, Rink and Roberts (1988) measured trust with a 20-item scale which resulted in four components scales evidencing reliabilities ranging from 0.67 to 0.88. Four items were adaptations of this overall scale. The remaining two trust items were developed by the author.

Cooperation. Cooperation refers to the supplier and customer working together for mutual benefit. It has been defined as, "similar or complementary actions taken by firms in interdependent relationship to achieve mutual outcomes or singular outcomes with expected reciprocation over time" (Anderson and Narus 1990, p. 45). The higher (second) order construct, cooperating, is theorized to give rise to four first order constructs: sharing, joint working, harmony, and flexibility. Macneil's concept of relational norms (1980) offers useful insights into the conceptual nature of cooperation despite a key conceptual difference between cooperating and norms (cooperation is behavioral—action oriented, norms are intentional—expectations oriented; see Chapter 2).

Few studies have operationalized cooperation. Kauffman and Dant (1991) have operationalized the dimensions of Macneil's relational norms concept. Because of the conceptual similarities of relational norm theory to the concept of cooperating, insights from Kaufmann and Dant's concept have been incorporated into the cooperation scale of the current study (particularly with respect to the first order norms flexibility and harmony). Other studies have operationalized constructs somewhat comparable to those constituting the cooperating construct: cooperative intentions (Crosby et al. 1990), norm of flexibility (Heide and John 1992), supplier flexibility (Noordewier et al. 1990), and joint action (Heide and John 1990). Again, none of these formulation was judged to adequately capture the conceptual domain of the four constructs posited here. Consequently, all items were derived by the author based on conceptualizations described in detail in Chapter 2.

Coordination. Coordination refers to those supplier activities or behaviors involved in facilitating and fostering the interfirm functional interactions. No studies were found which provided example measures of this concept. Ruekert and Walker (1987) employed a dimension, coordination mechanisms (with four constructs) in their study of marketing's interactions with other functional groups. One factor, formalization, a four-indicator factor, offers insights into how to operationalize the formalization-informalization concept (the reliability estimate of this construct ranged from .77 to .83 in the Ruekert and Walker study). However, the research contextual differences between their study and the present one (intrafirm interfunctional versus interfirm interfunctional) render the direct application of these indicators questionable. Consequently, the items comprising the coordination scales were derived by the author.

Intensity. Intensity refers to the extent to which means of reciprocal exchange of resources/information are employed between functional group participants from each firm.

These means include individual and group meeting, conversations, telephone calls, reports interchanges, and the like. The intensity of these means can be measured by the frequency of such exchanges and by the numbers of individuals and groups involved. A scale for frequency of interaction was used by O'Hara (1992) in a study of industrial buyer-seller relationships. This four-item scale evidenced an alpha value estimate of .93. This scale is not used in the present study however. Objective measures of both the frequency and number of groups and individuals will be used. These items will require that respondent estimate the actual frequency of interfirm functional meetings and other exchange as well as objective counts of the number of individuals and groups involved. These scales are developed by the author.

Situational Variables

Customer Dependence. Customer dependence refers to the supplier's perceived a need for resources available from the customer in order to attain its project-related strategic goals. Dependence is reflected in the importance and resource capability of the customer where importance is demonstrated by the customer's size, sales potential, and competitive technical and marketing strengths (Schurr 1986, Shapiro 1988, Spekman 1988).

In a study of industrial buyer-seller relationships, Noordewier et al. (1990) measured dependence as a one-item global measure (no validation results reported). In separate studies of channel relationships, Heide and John (1988) and Dant and Schul (1992), employed similar five-item scales to measure the "replacability" concept of dependency (with alpha values of .72 and .65, respectively) (see Chapter 2 for a review of different dependency concepts). Anderson and Narus (1990) measured "relative dependence" with a two-item scale (no validation results reported for individual scales). None of these measures of represent the dependency concept presented in the current study. Though the "resource dependence" view of dependency employed in the SBSR theory has received considerable theoretical treatment (see for instance Dickson 1983; El Ansary and Stern 1972; Pfeffer and Salancik 1978), no empirical studies were found which provide item examples or operational insights. Consequently, the measures for this scale employed in the study were derived by the author.

Product Importance. Product importance refers to the supplier's level of strategic interest and concern in the relationship-related product as reflected in the extent to which the product fits the firm's overall strategic direction (relative to its other products) and in the expectations or initial objectives which the firm established for this product. Since no studies have empirically investigated this concept, the scales employed to measure product importance were developed by the author based primarily on concepts in Shapiro (1988).

Data Analysis Techniques

Two broad empirical research questions guided the data analysis methods employed in the study:

1. Are the situational, process, and outcome variables which comprise the model distinct and valid constructs?
2. Do the constructs relate to each other as hypothesized?

The empirical test of the SBSR model addressed two primary goals. The first was to establish the internal and external validity of the constructs employed by testing the statistical significance of the measurement model and by using other construct validation procedures. The second research goal was to test the study's hypotheses which entailed evaluating the significance of the structural model's path coefficients. In this respect, model testing can be thought of as the analysis of two conceptually distinct models (Joreskog and Sorbom 1988). A confirmatory factor analysis model specifies the relations of the observed measures to their posited underlying constructs. The confirmatory structural model then specifies the causal relationships of the constructs to one another.

The structural equation model analysis in this study was based on the two-step approach recommended by Anderson and Gerbing (1982, 1988). This approach involves the separate estimation (and respecification) of the measurement model prior to the estimation of the structural submodel. The test of the measurement model enables a comprehensive confirmatory assessment of construct validity (Bentler 1978). The measurement model provides a confirmatory assessment of convergent validity and discriminant validity (Campbell and Fisk 1959). Given acceptable construct validity, the test of the structural model and path coeffients estimates then provides a confirmatory assessment of nomological validity (Cronbach and Meehl, 1955).

In both the questionnaire pretest and full study, tests for establishing claims of construct validity and for the purpose of scale refinement involved the examination of several measurement model (CFA) statistics and indexes. The validity of the individual measurement model for each construct was assessed using a combination of the composite reliability, Cronbach's coefficient alpha, percent variance extracted, proportion of significant t-values, and proportion of residual values greater than two in magnitude. The individual items were evaluated by examining the size and statistical significance of their CFA loadings (lambda coefficients) and magnitude of their inter-item correlations (ITC), in conjunction with their modification indexes and magnitude and proportion of residual values. External validity was assessed by comparing the composite reliability of each scale to the squared correlations of that scale with all other scales in the study.

The assessment of the overall structural sub-models, from the full study, involved an evaluation the goodness-of-fit test statistic (chi-square) and several comparative and incremental fit indexes. The magnitude and statistical significance of the chi-square goodness-of-fit statistic was used to help determine the acceptance or rejection of the null hypothesis related to each model. The fit indexes employed in the model assessment included the goodness of fit index (GFI), adjusted goodness of fit index (AGFI), root mean square residual (RMSR), normed chi-square index, and the normed fit index (NFI). The level of empirical support for each hypothesis was determined by an examination of the magnitude, direction and statistical significance of the path coefficient (gamma or beta coefficient) representing each hypothesized variable association. A summary of these statistical tests and indexes and the recommended criteria used to judge significance and acceptable fit is provided in Table 3.2.

TABLE 3.2
TEST STATISTICS AND INDEXES

Statistic/Index	Guideline	Source
INTERNAL CONSISTENCY		
Cronbach's Alpha	0.6 to 0.8 or better	Nunnally (1978)
ITC	0.7 or better	Churchill (1979)
Composite Reliability	0.7 or better	Hair et al. (1992)
Variance Extracted	0.5 or better	Hair et. al (1992)
EXTERNAL VALIDITY		
Size of factor loadings	0.4 or better	Hair et al. (1992)
Cross-loaded items	Critically review items which cross load on factors	Hair et al. (1992)
t-values of lambda coefficients	t-values should t-values should be significant (critical value ≤ 2)	Anderson and Gerbing (1982)

(Continued)

Statistic/Index	Guideline	Source
Normalized Residuals	Less than 5 percent of normalized residuals should exceed |2|.	Hayduk (1987)
Chi Square value	Low values are advocated	Fornell (1983)
Significance of Chi Square value	Non-significant	Joreskog and Sorbom (1988)
GFI	Tends toward 1	Joreskog and Sorbom (1988)
AGFI	0.9 or better	Hair et al. (1992)
RMSR	Small—no clear guidelines	Bagozzi and Yi (1989)
NFI	0.9 or better	Bentler and Bonnet (1980)
Tucker-Lewis Index	0.9 or better	Tucker and Lewis (1973)

The Construct Validation Process

The following steps were employed in the construct validity assessment process:

Step 1: Initial Examination of Factors. Factor analysis, using principal components and varimax rotation, was first used to explore the loading of indicators on constructs and subconstructs. The data matrix was partitioned in order to perform the exploratory factor analyses for different sets of constructs and subconstructs. That is, measures for sets of subconstructs were grouped into data subsets upon which the factor analysis procedure was performed. This approach was used because the ratio of total measures to observations exceeded recommended guidelines (Hair et al. 1992) for the complete data set.

This procedure affords a preliminary inspection of the theorized assignment of items to factors. Coefficient alpha and ITCs for each construct or subconstruct are also computed and examined in this step. All exploratory factor analyses were conducted on the basis of the minimum eigenvalue criterion, using a value of one as the basis for extracting dimensions (Hair et al. 1992).

The correspondence of measures to each potential construct or subconstruct was determined by an inspection of the derived factors. Specifically, the magnitude of factor loadings and item-to-total correlations (ITCs), together with existence of possible cross-loaded measures, were used to assess the correspondence of indicators to the theorized construct or subconstruct. In some instances in which measures clearly did not correspond to the theorized construct or subconstruct, they were eliminated in this step. In these instances, the item was <u>also</u> judged to be <u>qualitatively</u> dissimilar from the conceptual domain of the construct or subconstruct.

<u>Step 2: Generation of the Correlation Matrix</u>. The correlation matrix of the retained measures was then used as input to the CFA. Although use of the correlation matrix is problematic in some circumstances (Hayduk 1987), it is an acceptable procedure if the model is scale invariant (Joreskog and Sorbom 1988).

<u>Step 3: Examination of Single Factor CFA Models</u>. A single factor measurement model was run in LISREL for each hypothesized construct or subconstruct. Measures were assigned to the subconstructs and a CFA procedure performed using maximum likelihood estimation (MLE). For multiple-indicator models, MLE produces parameter estimates that best

conform to the constraints of internal and external consistency (Anderson and Gerbing 1982). An examination of the GFI, AGFI, lamba coefficients and t-values, normalized residuals, and explained variance revealed the fit of the overall model and of each measure. If one or more of these statistics fall outside the acceptable range (Table 3.1), items may be eliminated and the model re-run. It is important to recognize that respecification does not come directly from the empirical results; rather the respecification is "suggested by information contained in the output (Anderson and Gerbing 1988). Moreover, elimination of an indicator can have conflicting consequences. For example, the elimination of a measure to reduce the number of offending normalized residuals may concurrently reduce the composite reliability. Consequently the process of respecification is iterative, necessitating the analyst's judgment as to what constitutes "acceptable" model fit (Churchill 1979).

Step 4: Evaluation of Reliability for the Respecified Construct. Coefficient alpha and item-to-total correlations are re-run on the respecified model and examined for agreement with the CFA model solution including the magnitude and significance of the lambda coefficients.

Step 5: Evaluation of Discriminant Validity. A final test of construct validity involves the comparison of the magnitude of the composite reliability for a given scale to the magnitude of the squared correlations between that construct or subconstruct and all other constructs or subconstructs (as described above).

These steps were employed in both the pretest and full study assessments of construct validity. The results of the construct validation and scale refinement processes are reported in Chapter 4.

Questionnaire Pretest Approach

The purpose of this section is to describe the development and testing of the questionnaire used in the study. The development of the survey instrument followed the approach and guidelines recommended by Churchill (1979). In this approach, four major steps are employed in the questionnaire development and pretest: (1) specifying the domain of constructs; (2) generating a sample of items; (3) collecting data; and (3) purifying the measures. This section addresses principally the third and fourth stages, i.e., the approach used in the pretest or pilot testing of the questionnaire.

Expert Panel Review

A three-person panel of experts was used to qualitatively assess an initial draft of the pretest questionnaire -- content, wording, readability and overall quality. These experts were selected from the target population (see above) on the basis of their knowledge and involvement in buyer-seller strategic partnerships. The selection process involved making initial contacts established through the Institute for the Study of Business Markets (ISBM) with two member firms, Exxon Chemicals and Hewlett-Packard. The other firm, Ethyl Corporation, was arranged through the personal contact of this researcher. In each case, the initial contact person identified a member of his or her firm who met the criteria for a key informant described above. A draft copy of the questionnaire was sent to each expert who returned it with comments. (Individual follow-up and discussions were also held with the representative from Ethyl Corporation). These comments were incorporated into the final draft.

Pretest Sample and Survey Administration

The pretest sample consisted two groups of industrial firms in the Baton Rouge (Louisiana) area. The first group of respondents was drawn from firms comprising the membership listing of the Baton Rouge Chapter of the National Association of Purchasing Managers (BRNAPM). The second group was composed of industrial distributor firms arranged through individual contacts. Respondents received the questionnaire either by mail or individually at a BRNAPM meeting attended by the researcher. In all cases, the questionnaire was accompanied by a cover letter and addressed, stamped return envelope. A select number (42) of mailings also included a one dollar bill incentive. A follow-up postcard was sent to all BRNAPM member questionnaire recipients. Intensive telephone follow-up was also employed with a segment of the BRNAPM group (all chemical and petroleum companies).

A total of 191 questionnaires was distributed and 54 were returned. Of these, 21 indicated no involvement in industrial buyer-seller relationship. The overall low response rates can probably be attributed to three major factors. First, many member firms of the NAPM did not fit the study context; for example, those involved in governmental or retail purchasing. Second, only a fraction of the firms which did match the context are involved in buyer-seller partnerships as described in the questionnaire. Follow up phone contacts indicated that even within a given industry (e.g., petrochemicals), some firms were involved in strategic partnering while others were not. (Some individuals indicated that their firms were interested in developing relationships or were planning to do so.) The third major factor inhibiting response was probably the questionnaire framing. The questionnaire was framed from the perspective of a sales/marketing function in the supplying firm. Most of the potential respondents were in purchasing positions in customer firms and, apparently, could not "translate their experience across the dyad" to address the questionnaire from a marketing perspective.

Despite the relatively small sample size, the pretest achieved its primary goals. First, the pilot study afforded the opportunity to test the actual survey administration mechanisms to be employed in the full study -- the telephone prenotification, the mailing package, and the follow-up procedures. Second, it allowed the testing of the questionnaire format including the respondent instructions, question framing and wording, and general response. Third, the pretrest analysis demonstrated overall good scale validation results (see Chapter 4). Scales which required respecification were identified and modified or replaced as necessary.

Limitations of Study

All empirical studies are limited in some respect or another. The current study is no exception and has several limitations. First, this study design is not experimental in the strict sense of the word. Consequently, the four conditions for evidencing causation, temporal sequentiality, associative variation, nonspurious association, and theoretical support (Hunt 1983), cannot be rigorously met. However, the strength of any interpretation is a function of the compatibility of the data with the hypotheses (Sternthal, Tybout and Calder 1987). To the extent that the data are consistent with the model, the conceptual framework will be supported. The burden of claiming causation then resides in the theorist's efforts to establish a sound theory (hypotheses) at the outset: "although in many instances not all of the established criteria for making causal assertions...are strictly met, strong causal assertions can be made if the relationships are based on theoretical rationale" (Hair et al. 1992, p. 435).

Second, the research method is cross-sectional as opposed to longitudinal in design. Most researchers view the industrial buyer-seller relationship as a time-related process in which variable associations form over time through experience -- the relationship "grows, develops and matures" (see the literature review in Chapter 2). The current study, in an effort to reflect the time-dependent nature of many of the variable associations inherent in the relationship, asks respondents to answer questions which look backward and forward as well as in the present.

The third limitation relates to the sampling technique employed. The sampling method used here is "convenience" sampling, the selection of firms based on their accessibility and willingness to cooperate. The use of statistical inference is not strictly warranted unless the sample is randomly chosen (Scheaffer, Mendenhall, and Ott 1986). However, research precedent in marketing provides ample support for using this approach, particularly since practical considerations render the use of random sampling nearly infeasible. For instance, the survey response rates with random sampling would likely be so low as to preclude this approach.

The use of key informants is another limitation which warrants consideration. While it is generally agreed that key informants are useful sources of information in organizational research, the data provided by these personnel must be viewed carefully (Ruekert and Churchill 1984), especially when individuals are asked to perform complex social judgments or speak on behalf of the entire organization. The present study mixes units of analysis by including several organization-level constructs (e.g., functional cooperation), as well as those at the individual level. It is felt that the problem of mixed level representation can be obviated by identifying and selecting respondents (through careful pre-screening) who possess the breadth of organizational contacts and perspective to sufficiently describe and characterize the organization as a whole.

The final limitation associated with this study's design concerns studying a true "dyadic" phenomenon (the relationship) from only one side, that of the supplier. By focusing on the supplier side, the interrelationships between buying and selling firms cannot be addressed by matched comparisons. Again, practical research considerations preclude using this approach in the current study since it would be necessary to identify, match and simultaneously sample somewhere in the range of 100 to 200 buyer-seller firm dyads.

CHAPTER 4

EVALUATION OF THE MEASUREMENT SCALES

This chapter presents the results of the evaluation of the measurement scales employed in the study. The objectives of this evaluation were to determine the construct validity of the scales and to find a parsimonious set of items representing each construct in the SBSR structural model. In the next section, an overview of the theory and approach underlying the construct validation process is provided. This section also addresses some issues surrounding the specification and test of the structural model, the subject of Chapter 5. The second major section provides the results of the pretest and full study scale development and assessment process. The construct validity analysis for each scale is described and the final set of scales to be employed in the structural model analysis is presented and discussed. The final section provides the overall conclusions which emerge from the construct validity assessment.

An Overview of Unidimensionality and Scale Development Methods

All constructs in the SBSR empirical model were measured with multiple indicators. The construct validity assessment and scale development procedures centered on factor analytic and reliability methods (Churchill 1979) together with confirmatory factor analysis (Joreskog and Sorbom 1988). Assessment of the initial scales, the refinement process, and the final scales proposed for further study are detailed below. Before reviewing this process, the following discussion provides an overview of the underlying measurement theory and analytical procedures related to the validity assessment methods and refinement processes in scale development.

Each concept or construct in the SBSR model is an abstraction, or latent variable, and is not directly measurable. Measurement of each concept was accomplished by linking one or more observed variables (hereafter referred to as indicators, items or measures) to the construct. The group of indicators for a latent variable, or construct, is called the measurement scale. The crucial question is: Do the observed indicators -- does the measurement scale -- truly and accurately represent the concept? In other words, is the construct *valid*? This is a critical question because, as Anderson and Gerbing (1982) note, the measurement of each construct must be properly specified and deemed valid before meaning can be assigned to the analysis of the relationship between constructs. Or, as Hayduk states: "If the multiple indicators or multiple concepts do not all share a single, uniformly effective, mechanism effecting subsequent model concepts, the model will fail to fit the data" (1987, p. 216).

Construct unidimensionality (Nunnally 1978) is an essential element of model specification and construct validation. Unidimensionality is based on the existence of a single construct (or trait or concept) underlying a set of indicators (Hattie 1985). Each construct is measured by multiple indicators and each indicator measures only a single construct (Anderson and Gerbing 1982). The term "congeneric model" is used to describe a measurement scale in which every pair of the indicators, or measures, "have unit correlations" (Joreskog and Sorbom 1988, p. 79).

A covariance structure of measures for a construct must exhibit internal and external consistency and adequate reliability to be considered unidimensional and useful (Anderson and Gerbing 1982). When the conditions for unidimensionality and usefulness are not met, interpretational confounding (Burt 1976) renders structural equation modeling analysis problematic, if not impossible. Interpretational confounding exists when there is "the assignment of empirical meaning to an unobserved variable which is other than the meaning assigned to it by an individual a priori to estimating unknown parameters" (Burt 1976, p. 4).

Interpretational confounding occurs when two conditions arise: (1) the indicators of the unobserved variable, or construct, have low covariance among themselves, and (2) the covariance of the indicators of the construct with the indicators of other unobserved variables in the model are widely different (Burt 1976). Anderson and Gerbing (1982) point out that if these two conditions exist, the requirements for internal and external consistency are not met. Thus, a measurement scale's internal and external consistency must be assessed in order to establish claims of unidimensionality. The procedures employed in this study for assessing internal and external consistency (or equivalently, for assessing the conditions of interpretational confounding) and for construct respecification are described next.

For the purposes of this study, the statistical tests for internal consistency included Cronbach's alpha reliability measure, item-to-total correlations (ITC) (Churchill 1979) and, from confirmatory factor analysis (CFA), composite reliability and variance extracted (Hair et al. 1992). Assessment of external consistency, which relied principally on CFA, attempted to demonstrate a significant "fit" of the indicators to the construct, thereby assuring high internal covariance.

The statistics used included the chi square (X^2) overall fit statistic and its statistical significance level, together with the Goodness of Fit Index (GFI) and a parsimonious fit statistic, the Adjusted Goodness of Fit Index (AGFI) (Hair et al. 1992). Unidimensionality was also assessed by examining the number and magnitude of the normalized residuals and the magnitude and statistical significance of the lambda coefficients (factor loadings) from CFA. (A summary of these statistics and related guidelines is provided in Chapter 3, Table 3.1.)

A final procedure for assessing construct validity involved the evaluation of the discriminant validity of the measurement scales. The magnitude of the composite reliability for a given construct was compared to the magnitude of the squared correlations between that construct and all other constructs. A reliability value greater than all values of the squared inter-construct correlations provided evidence of the scale's discrmiminability, further supporting claims of construct validity.

Some Terminology—"Construct" and "Subconstruct"

This examination of construct validity was performed on two different levels of concepts in the model. Recall that the study's hypotheses, detailed in Chapter 2, involved theorized associations among eleven major concepts as portrayed in Figure 2.7. Many of these eleven major concepts, in turn, were composed of subconcepts. For instance, the concept of cooperation was theorized to consist of four subconcepts: sharing, flexibility, harmony, and joint working (and global measure). In those instances in which subconcepts were proposed, the construct validity analysis procedure was performed at both levels.

An explicit terminology has been established to help distinguish which conceptual level is being addressed at any give point in the analysis. In the discussion that follows the terms "construct" and "subconstruct" are given specific and distinct meanings. The term *construct* refers only to each of the eleven major concepts specified in the hypotheses described in Chapter 2, as portrayed in Figure 2.7. The term *subconstruct* refers to subdimensions comprising a construct. In this convention, a construct can thought of as second-order factor and the subconstructs, as first-order factors, where the first-order factors arise from the second-order factor and the observed variables (indicators), in turn, arise from the first-order factors. In this sense, the "subconstructs" are reflective of the "construct."

SBSR Structural Model Specification Issues

As will be explained in detail in Chapter 5, two structural models of the SBSR have been investigated. Both models corresponded to the SBSR model portrayed in Figure 2.7. The first model, termed the CLS Model (Construct-Level Structural Model), consisted of eleven constructs and fifteen hypothesized relationships. The second model, termed the

SubCLS Model (SubConstruct-Level Structural Model), was patterned on the first, but was different in one respect. Two selected concepts in this model were investigated at the "subconstruct" level. The purpose of the SubCLS Model (which had a total of thirteen constructs and subconstructs) was to investigate certain of the hypothesized relationships among concepts at a more detailed, conceptually richer level, which might also prove to be more meaningful from a managerial perspective.

The decision regarding the number of concepts to test at the subconstruct level in the structural model was influenced by two opposing forces and involved making a compromise between these forces. The first force dealt with a fundamental objective and tenet of science, *parsimony*. A parsimonious theory is "frugal" in conception and design. Good theories should be simple, but not "simplistic."

The second force involved the inclination to investigate phenomena at more complex, deeper levels of conceptualization and analysis. Parsimonous theories tend to be general and abstract. In investigating solely broad abstract concepts, the researcher risks disregarding theoretical insights -- a "richness" of phenomena -- made available from probing the deeper level. Moreover, the more specific the investigation -- the deeper the probing -- the more likely that relevant managerial insights may emerge. Thus, the researcher is faced with tension between, on the one hand parsimony and highly generalizable abstraction, and on the other, "richness" and specificity of phenomena.

This study's conceptualization of "cooperation" provides a good illustration of these points. One goal of SBSR theory was to understand and explain the phenomenon of cooperation in terms of *specific* behavioral interactions between the seller and buyer firms. The "global" concept, cooperation, was theorized to give rise to certain specific interfirm behaviors: sharing of information; flexibility in exchange; harmony in conflict resolution; and jointness in decision making. Thus, by conceptualizing cooperation in terms of four dimensions of interfirm cooperative behavior, this theory compromised parsimony for richness.

These observations suggest that a compromise was required in specifying the SBSR empirical model. Should the researcher choose to include one "global" concept or four specific ones? No rigid guidelines exist to aid in this decision; judgment was required. In the next section, the judgments involved in specifying the SBSR structural model are explained.

Construct Selection for the Two Empirical Models

In the SBSR theory, five of the eleven concepts were conceptualized as single-construct concepts: Continuity, Exposure, Loss of Autonomy, Trust, and Frequency. There are no subconstructs for these concepts. Consequently these five concepts were incorporated into both structural models as single constructs.

The six remaining concepts were composed of subdimensions or first-order factors. Judgments were required regarding which and how many of these subconstructs to incorporate into the structural model analysis. These judgments were based on both substantive theoretical considerations and the demonstrated psychometric properties of their scales. The concepts selected for investigation at the subconstruct level were those judged to best advance understanding and explanation of industrial marketing relationships. Each selected construct, moreover, was also judged to have demonstrated adequate levels of construct validity.

Based on these considerations, two concepts were selected for evaluation at the subconstruct level, Switching Costs and Product Importance. The selection of these particular concepts is not intended to suggest that the investigation of other concepts (e.g., cooperation) at the subconstruct would have had no theoretical or practical merit. It is simply to recognize that the objective of parsimony imposed limits on the number of selected constructs.

The Switching Costs concept was selected because it has received limited empirical investigation to date and, moreover, has never been investigated at the level proposed in this study (in terms of Hard and Soft Assets). Switching costs was represented in the CLS Model (that with eleven constructs only) as the Hard Assets subconstruct. In many industrial marketing relationship studies, switching costs (specific assets) are conventionally conceptualized as investments in plant and products. The selection of Hard Assets adheres to this convention affording the opportunity to corroborate and extend extisting theory and empirical studies (for the few that exist). In the SubCLS Model, both hard and soft assets were incorporated. This offered the possibility of investigating theoretical and practical differences between these subconstructs.

The Product Importance concept was selected because it afforded the opportunity to investigate possible different types of relationships based on their goal structure (in this case, those directed primarily toward "strategic" goals and those, toward "logistics" goals). Heretofore, research in the field has not attempted to identify and understand different types of relationships. The treatment of all relationships as "generic" may obscure differences that are important in understanding and explaining, as well as managing, close buyer-seller interactions.

In the CLS Model, the subconstruct Strategic Objectives was selected to represent the Product Importance concept. This selection was made, in part, because the Strategic Objectives subconstruct most closely represents existing conceptualizations of Product Importance (for example, see Shapiro 1987a and 1987b). The incorporation of the Logistics Objectives subconstruct together with Strategic Objectives in the SubCLS Model permitted the examination of the "JIT" type buyer-seller relationship (see Frazier et al. 1988).

For reasons of parsimony, each of the remaining four concepts, Coordination, Cooperation, Benefits, and Customer Importance, was incorporated into the model as a single construct. Each of these concepts was measured by a set of subonstructs. One subconstruct was selected for each concept to depict that concept in the structural model. Two broad criteria guided this selection process: substantive considerations and the results of the construct validity assessment. Substantive considerations suggested that the selected subconstruct best represent the "core" idea of the concept. For instance, Global Cooperation was chosen to represent Cooperation. Furthermore, the scale for each selected subconstruct had to demonstrate adequate levels of unidimensionality. Claims of construct validity were required prior to selecting a concept into the structural model.

Table 4.1 provides a listing of the constructs and subconstructs selected for the analysis of the empirical models that resulted from this decision making process.

Scale Evaluation and Refinement Results

This section summarizes the results of the unidimensionality assessment process described above. The scale evaluation results are described for each construct or subconstruct as initially specified and following respecification (if any). The analyses are grouped according to conceptually linked constructs which were analyzed in data subsets in each exploratory factor analysis from the pretest. The overall purpose of this analysis was to determine the construct validity for the set of scales employed in the structural model test of the study's hypotheses.

These construct validation steps were employed in this analysis:

1. First, exploratory factor analysis was performed on each data subset from the pretest. The results of this analysis afforded a preliminary inspection of the extracted dimensions and their correspondence to the theorized constructs and subconstructs.

TABLE 4.1
CONSTRUCTS AND SUBCONSTRUCTS SELECTED
FOR THE EMPIRICAL MODELS

CONCEPT	CLS Model CONSTRUCTS	SubCLS Model ADDED SUBCONSTRUCTS
Continuity	Continuity	NA
Exposure	Exposure	NA
Loss of Autonomy	Loss of Autonomy	NA
Trust	Trust	NA
Frequency of Interaction	Relative Frequency	NA
Coordination	Management Coordination	NA
Cooperation	Global Cooperation	NA
Benefits	Overall Benefits	NA
Customer Importance	Customer Composite	NA
Product Importance	Strategic Objectives	Logistics Objectives
Switching Costs	Hard Assets	Soft Assets

2. Next, from the pretest data, CFA, reliability and interitem correlation analyses were performed for the scales representing each construct or subconstruct. Scales were respecified and reanalyzed as necessary to assure satisfactory levels of unidimensionality. This step resulted in the determination of the final set of scales employed in the full test questionnaire.

3. Third, CFA, reliability, and interitem correlation analyses were performed on each scale from the full test data. Respecifications were made as required to

achieve scales with adequate levels of construct validity for use in the structural model tests of hypotheses.

In the discussion that follows, the construct validity process results are described according to these three steps in the order presented above, together with the conclusions that emerged from the analysis of each scale.

Continuity, Loss of Autonomy, Exposure of the Firm, Trust

Exploratory factor analysis was conducted from the pretest on a data subset comprising measures for four constructs: Continuity, Loss of Autonomy, Exposure of Firm, and Trust. A total of six dimensions was extracted. Two of the extracted six dimensions corresponded well to the theorized constructs, Continuity and Trust, while the third dimension was represented by measures only from the exposure and loss of autonomy constructs. The fourth dimension appeared to be a "general factor" inasmuch as it was represented by measures from all subconcepts. The final extracted dimension was a single-measure factor with one trust indicator. These derived dimensions are compared to the hypothesized scale in the section below.

Continuity

Pretest Scale. Continuity was theorized to consist of five indicators as shown in Table 4.2. In the exploratory factor analysis four of the five measures loaded well (.87, .79, .71, and .68) on a single continuity construct while the other indicator loaded quite highly on the general factor (.81) but crossloaded only marginally on the continuity construct (.25). The alpha value for the five-item solution was .83, and the five-indicator CFA model yielded these results: GFI, .841; AGFI, .523; composite reliability, .83; variance extracted of 51%; all t-values were significant, and 10% of the normalized residuals exceeded ± 2.

TABLE 4.2
CONSTRUCT VALIDITY TESTS -- PRETEST
CONTINUITY

	Fit Statistics	
	Initial Construct	Final Construct
Construct—CONTINUITY	(.822)	(.830)
Item		
The relationship we have with this customer is essentially "evergreen"	.705	.651
Renewal of the relationship with this customer is virtually automatic	.563	Drop
The parties expect this relationship to last a long time	.887	.986
My firm expects this relationship to last at least five years	.652	.549
My firm will probably be supplying this customer for several years	.714	.709

Note: Values represent lambda coefficients from CFA; values in parentheses are construct/subconstruct composite reliabilities.

The lowest loading measure was eliminated and the model reestimated with these results: GFI, .971; AGFI, .857; composite reliability, .82; variance extracted of 55%; all t-values were significant, and none of the normalized residuals exceeded ± 2. The coefficient alpha for this four-item scale was .83. Because of these favorable CFA results and the results of the exploratory factor analysis, in which only one measure corresponded poorly to the theorized dimension, the four-indicator scale was adopted for use in the full study questionnaire.

Full Test Scale. Results from the full study are shown in Table 4.3. The initial four-item scale had marginally acceptable results. The composite reliability was .763, the coefficient alpha, .675, and the variance extracted, 46.0%. An inspection of the item loadings revealed one ill-fitting indicator, the first, which had a CFA loading and ITC values of .390 and .311, respectively. This item was eliminated and the three-item CFA model estimated, with solid results; the reliability estimates were .797 and .800, respectively, with a variance extracted of 56.7%.

TABLE 4.3
CONSTRUCT VALIDITY TESTS—FULL STUDY
CONTINUITY

CONTINUITY—Initial

ITEM	CFA LOADING	ITC
The relationship we have with this customer is essentially "evergreen"	.390	.311
The parties expect this relationship to last a long time	.813	.625
My firm expects this relationship to last a long time	.723	.568
My firm will probably be supplying this customer for several years	.714	.526

<u>Measures of Overall Fit</u>

Composite reliability	.763
Variance extracted	46.0%
T-Values Significant	4/4
Residual values > 2	0/6
Coefficient alpha	.675

(Continued)

CONTINUITY—Respecified

ITEM	CFA LOADING	ITC
The parties expect this relationship to last a long time	.780	.610
My firm expects this relationship to last a long time	.746	.694
My firm will probably be supplying this customer for several years	.730	.682

<u>Measures of Overall Fit</u>

Composite reliability	.797
Variance extracted	56.7%
T-Values Significant	3/3
Residual values > 2	NE
Coefficient alpha	.800

Conclusions. The poor results for the first indicator from the full test may be the consequence of a confounding factor not revealed in the pretest. Several respondents from the distributor groups indicated, either by phone to the researcher or by marginal comments on the returned questionnaires, that they were unfamiliar with the term "evergreen." Although major industrial firms (including those in the chemical industry) typically recognize and use this term as conventional supply contract parlance, it appears to be unfamiliar to least some smaller firms. The respecified three-indicator scale evidenced satisfactory results and was adopted for use in the evaluation of the structural model.

Loss of Autonomy

Pretest Scales. The loss of autonomy construct consisted originally of three indicators as shown in Table 4.4. In the exploratory factor analysis all of the loss of autonomy measures crossloaded to one degree or another. Two measures loaded moderately on a combination exposure/loss of autonomy factor (.59, .54), while the third crossloaded on this factor (.33). The alpha value for the three-indicator solution was .68, with ITCs of .49,

.57, and .44. The three-indicator CFA model yielded these results: composite reliability, .70; variance extracted of 45%, and all t-values significant. Despite these borderline results, the three-indicator scale was retained in order to further investigate the concept in the full study. The results of the exploratory factor analysis suggest that respondents may not clearly distinguish between the exposure and loss of autonomy concepts. The retention of all loss of autonomy measures afforded the opportunity to fully assess this concept in the full study.

TABLE 4.4
CONSTRUCT VALIDITY TESTS -- PRETEST
LOSS OF AUTONOMY

	Fit Statistics	
	Initial Construct	**Final Construct**
Construct -- LOSS OF AUTONOMY	(.701)	(.701)
Item		
Because of our close association with this customer, it will be harder, in the future, to work with their competitors	.630	.630
We have lost opportunities to work with other customers because of our relationship with this customer . . .	.805	.805
My firm is constrained from freely selling in the marketplace because of our relationship with this customer	.541	.541

Note: Values represent lambda coefficients from CFA; values in parentheses are construct/subconstruct composite reliabilities.

Full Study Scales. The final study results are portrayed in Table 4.5. The results do not differ materially from those of the pretest. The composite reliability was .674, the variance was 41.7%, and the item loadings, .508, .791., and .602.

Conclusions. The construct validity evaluation results for this concept, Loss of Autonomy, while not as strong as those for others in the model, are adequate for adoption in the structural model test. This concept, drawn primarily from the normative literature on industrial relationships, has not been previously operationalized. It is fair to say that in the future, further construct development efforts are warranted for a fuller understanding of this concept.

TABLE 4.5
SCALE ASSESSMENT MEASURES -- FULL STUDY
LOSS OF AUTONOMY

LOSS OF AUTONOMY **ITEM**	**CFA LOADING**	**ITC**
Because of our close association with the customer, it will be harder in the future to work with their competitors	.508	.397
We have lost opportunities to work with other customers because of our relationship with this customer	.791	.525
My firm is constrained from freely selling in the marketplace because of our obligations and commitment to this customer	.602	.448

Measures of Overall Fit
Composite reliability .... .674
Variance extracted 41.7%
T-Values Significant 3/3
Residual values > 2 .... NE
Coefficient alpha .... .642

Exposure of Firm.

Pretest Scales. Exposure of firm was theorized to consist of three indicators as shown in Table 4.6. In the exploratory factor analysis two of the three exposure measures loaded on the combination exposure/loss of autonomy construct (.79 and .75) while the other indicator crossloaded somewhat on this construct (.33) but loaded primarily on the general factor (-.61). The alpha value for the three-item solution was .68, and the three-indicator CFA model yielded these results: composite reliability, .73; variance extracted of 50%; and all t-values significant. However, one measure loaded negatively (and had a negative ITC) on the construct contrary to theory. An inspection of the wording of this item (see the third item in Table 4.6) indicated a possible respondent confounding consideration. The other two items are framed from the perspective of the respondent's firm whereas the problem item was framed from the perspective of the customer firm. Because of this confounding possibility, the problematic item was eliminated and two new items added for the full study test as shown in Table 4.6.

TABLE 4.6
CONSTRUCT VALIDITY TESTS -- PRETEST
EXPOSURE OF FIRM

	Fit Statistics	
	Initial Construct	**Final Construct**
Construct -- EXPOSURE OF FIRM	(.730)	NE
Item		
My firm has a lot at stake in this relationship	.960	NE
My firm has placed a great deal of capital (plant, distribution equipment, etc.) at risk by dealing with this single customer	.509	NE
There is a good chance that the customer can't make this project work	-.560	Drop

Items added in the full study:
Because of our close alliance with a single customer, we are assuming more risk than normal.

The outcome of this project is somewhat uncertain.

Notes: (1) Values represent lambda coefficients from CFA are values in parentheses, construct/subconstruct composite reliabilities.
(2) NE: Not evaluable; insufficient number of indicators.

Full Study Scales. As shown in Table 4.7, the results for the four-indicator scale were marginal. The composite reliability estimate was .658 and the variance extracted, 39.3%. An inspection of the individual indicators revealed that the fourth item, an indicator added from the pretest assessment, was negative and nonsignificant. Consequently this item was eliminated and the CFA model run with these results: the composite and alpha reliabilities were .740 and .727, respectively, with a variance extracted of 51.3%.

TABLE 4.7
CONSTRUCT VALIDITY TESTS—FULL STUDY
EXPOSURE OF THE FIRM

EXPOSURE—Initial

ITEM	CFA LOADING	ITC
My firm has a lot at stake in this relationship	.497	.391
My firm has placed a substantial amount of capital at risk (e.g., in distribution equipment) by dealing with this single customer	.995	.507
Because of our close alliance with this single customer we are assuming more risk than normal	.553	.472
The outcome of this project is somewhat uncertain	-.132	-.124

<u>Measures of Overall Fit</u>
Composite reliability .... .658
Variance extracted 39.3%
T-Values Significant 3/4
Residual values > 2 .... 0/6
Coefficient alpha .... .485

EXPOSURE—Respecified

ITEM	CFA LOADING	ITC
My firm has a lot at stake in this relationship	.505	.480

(Continued)

ITEM	CFA LOADING	ITC
My firm has placed a substantial amount of capital at risk (e.g., in distribution equipment) by dealing with this single customer	.979	.674
Because of our close alliance with this single customer we are assuming more risk than normal	.561	.530

Measures of Overall Fit
Composite reliability 740
Variance extracted 51.3%
T-Values Significant 3/3
Residual values > 2 . . . . NE
Coefficient alpha 727

Conclusions. These results demonstrate satisfactory levels of construct validity for the respecified scale. Consequently this scale was used in testing the structural model.Trust

Pretest Scales. The trust construct was theorized to consist of eleven indicators as shown in Table 4.8. In the exploratory factor analysis six of the eleven trust measures loaded well on a single trust construct (loadings ranging from .64 to .90) while the other indicators crossloaded, primarily on the trust construct and the general factor. The eleven-item model had ITCs ranging from -.12 to .85, and exhibited an alpha value of .79. Seven items evidenced ITC estimates of approximately .5 or greater. The eleven-indicator CFA model yielded these results: GFI, .603; AGFI, .405; composite reliability, .84; variance extracted of 39%; 10 of 11 t-values were significant, and 20% of the normalized residuals exceeded ± 2. The measures which contributed most to the excessive residual results and those loading poorest were eliminated (six in total) and the resulting five-indicator model reestimated with these results: GFI, .920; AGFI, .759; composite reliability, .83; variance extracted of 56%; all t-values are significant, and 10% of the normalized residuals exceeded ± 2. The coefficient alpha for this five-item scale was .81. Even though 10% of the residuals exceeded the cutoff value (± 2) thus surpassing the guideline level, the other statistics indicate reasonable fit. Accordingly, the five-indicator scale was adopted for use in the full test.

TABLE 4.8
CONSTRUCT VALIDITY TESTS -- PRETEST
TRUST

	Fit Statistics	
	Initial Construct	Final Construct
Construct -- TRUST	(.838)	(.832)
Factor/Item		
It is necessary to be cautious in dealing with the information provided by this customer (R)	.305	Drop
This Customer... Can be relied upon to keep its promises	-.950	.948
Is trustworthy	-.983	.996
Always puts it own interests first (R)	-.002	Drop
Is very honest in its dealings with us	-.276	Drop
Is very reliable	-.765	Drop
Can be relied on for its technical ability	-.435	.397
Is professional in our dealings	-.374	Drop
Appears to sometimes withhold useful information that would benefit us (R)	.447	-.463
Can be trusted to not reveal our information to others	-.662	Drop
Must be constantly monitored and double-checked on the information which they provide (R)	.750	-.721

Notes: (1) Values represent lambda coefficients from CFA; values in parentheses are construct/subconstruct composite reliabilities.
(2) (R) indicates negatively worded item only; scale is not reversed in CFA.

Full Study Scales. The initial five-item scale test results are shown in Table 4.9. Although the composite reliability estimate (.799) and other test statistics indicate adequate overall fit for this model, one indicator was potentially problematic. The third item had low and insignificant loading and ITC estimates of -.233 and .288, respectively. This item was eliminated and the four-indicator model estimated with these results: reliabilities of .842 and .822, respectively and variance extracted of 59.3%.

TABLE 4.9
CONSTRUCT VALIDITY TESTS—FULL STUDY
TRUST

TRUST—Initial

ITEM	CFA LOADING	ITC
This customer... Can be relied upon to keep its promises	.895	.723
Is trustworthy	.953	.736
Can be relied on for its technical ability	.660	.525
Appears to sometimes withhold useful information that would benefit us	-.233	.288
Must be constantly monitored and double-checked on the information which they provide	-.472	.524

Measures of Overall Fit

Composite reliability	.799
Variance extracted	48.4%
T-Values Significant	5/5
Residual values > 2	1/10
Coefficient alpha	.774

(Continued)

TRUST—Respecified

ITEM	CFA LOADING	ITC
This customer...		
Can be relied upon to keep its promises	.886	.764
Is trustworthy	.963	.810
Can be relied on for its technical ability	.660	.608
Must be constantly monitored and double-checked on the information which they provide	-.463	.437

<u>Measures of Overall Fit</u>
Composite reliability 842
Variance extracted 59.3%
T-Values Significant 4/4
Residual values > 2 . . . . 0/6
Coefficient alpha 822

Conclusions. The problem item from the full study analysis (the fourth listed in Table 4.9) was also weak in the final pretest scale with a CFA loading of only -.463. Apparently respondents do not perceive the withholding of information as a customer behavior denoting a lack of trust (it was a negatively worded item). The respecified scale, omitting this indicator, displayed very strong validity results as noted above and, therefore, used in the testing of the structural model.

The Benefits Construct

The Benefits construct was theorized to consist of four subconstructs: Strategic Benefits, Logistics Benefits, Product Benefits, and Overall Benefits. The first CFA model evaluated from the pretest study was a composite of all the Benefits measures. Although this model evidenced a reliability estimate of .810, the low magnitude of its variance extracted (25%) coupled with its widely divergent loading values (.001 to .901) suggested that the composite model does not reflect a single Benefits concept.

Exploratory factor analysis was conducted on a data subset comprising measures for the subconstructs, Strategic Benefits, Logistics Benefits, Product Benefits, and Overall Benefits. A total of six dimensions was extracted. Three of the four dimensions corresponded reasonably well to theorized subdimensions (logistics, overall and product). Two of the dimensions split all of the strategic benefits measures; i.e., the strategic items were shared by two different factors. However, an inspection of the factor solution revealed that most of the strategic benefit measures also crossloaded between these two dimensions. The sixth and final dimension was a single-item, solidarity factor. The correspondence of the extracted dimensions to the theorized subconstructs was judged to be adequate. Each subconstruct is individually evaluated next.

Strategic Benefits

Pretest Scales. Strategic benefits was posited as a six-indicator subconstruct as shown in Table 4.10. The alpha value for the six-item solution was .87, and the six-indicator CFA model yielded these results: GFI, .689; AGFI, .275; composite reliability, .87; variance extracted of 55%; all t-values are significant, and 13% of the normalized residuals exceeded ± 2. In the exploratory factor analysis, three of the six strategic benefits measures loaded well on the first strategic benefits subconstruct (.88, .83, .82), while three others loaded on the second strategic subconstruct (.87, .78, .77). However two of these second three indicators also crossloaded somewhat on the first strategic benefits subconstruct (.34, .45) (the third item of the second three crossloaded poorly on the strategic benefits subconstruct (.08)). The lowest loading measure from the CFA was eliminated and the five-item model reestimated with these results: GFI, .738; AGFI, .215; composite reliability, .89; variance extracted of 62%; all t-values are significant, and 10% of the normalized residuals exceeded ± 2. The coefficient alpha for this five-item scale was .89. Despite the poor AGFI and the slightly elevated level of offending residuals, the other statistics indicate reasonable fit. Therefore, the five-indicator scale was adopted for use in the full study.

TABLE 4.10
CONSTRUCT VALIDITY TESTS—PRETEST
BENEFITS

	Fit Statistics		
	Composite Construct	**Initial Subconstruct**	**Final Subconstruct**
Construct -- BENEFITS	(.810)		
Subconstruct/Items			
Strategic Benefits		(.873)	(.892)
Enter a market segment or niche previously not supplied	.833	.836	.848
Enter a new market for our firm (or SBU)	.821	.810	.824
Obtain a window on a new or developing market	.673	.756	.727
Obtain a window on a new technology	.587	.680	.642
Develop a product new to our firm	.901	.863	.877
Bring a product to market earlier than we would have otherwise	.385	Drop	---
Logistics Benefits		(.834)	(.834)
Reduce our manufacturing costs	.268	.699	.699
Reduce our warehousing costs	.374	.934	.934
Reduce our distribution costs	.353	.613	.613
Reduce the level of inventory needed to supply the customer	-.001	.645	.645
Reduce waste materials	.294	.621	.621

(Continued)

	Fit Statistics		
	Composite Construct	Initial Subconstruct	Final Subconstruct
Product Benefits		(.910)*	(.910)*
Improve the quality of an existing product	.247	NE	NE
Improve the performance of an existing conduct	.334	NE	NE
Overall Benefits		(.730)	(.820)
Substantially increase our market share	.436	.930	.933
Increase our volume and revenues with this customer	.250	.854	.853
Substantially increase our total profit	.286	.492	.488
Solidify competitive position with this important customer	.424	.143	Drop

Notes (1) Values represent lambda coefficients from CFA; values in parentheses, construct/subconstruct composite reliabilities.
(2) NE: Not evaluable; insufficient number of indicators.
(3) Asterisk indicates value for coefficient alpha since reliability cannot be estimated through CFA

Full Study Scales. Table 4.11 portrays the results of the full study evaluation of the Strategic Benefits scale. The reliability estimates for the overall model were .843 and .842, and the variance extracted was 52.4%. The CFA loadings and ITCs were relatively large in magnitude and uniform, with one possible exception, indicator number five. This indicator was eliminated and the model reestimated with these results: CFA reliability of .852 and variance extracted of 59.2%.

Conclusions. While both CFA models tested in the full study evidenced sound results, the respecified, four-item scale was judged to be superior for possible use in the structural model evaluation. The eliminated item addressed benefits accruing from new product development, a practice that may not be widespread in buyer-seller relationships.

TABLE 4.11
CONSTRUCT VALIDITY TESTS—FULL STUDY
STRATEGIC BENEFITS

STRATEGIC—Initial

ITEM	CFA LOADING	ITC
Enter a market segment or niche previously not supplied	785	.697
Enter a new market for our firm (or SBU)	.802	.693
Obtain a window on a new or developing market	.781	.688
Obtain a window on a new technology	.709	.682
Develop a product new to our firm	.501	.512

Measures of Overall Fit
Composite reliability .... .843
Variance extracted 52.4%
T-Values Significant 5/5
Residual values > 2 .... 0/10
Coefficient alpha .... .844

STRATEGIC BENEFITS—Respecified

ITEM	CFA LOADING	ITC
Enter a market segment or niche previously not supplied	.790	.705
Enter a new market for our firm (or SBU)	.818	.713
Obtain a window on a new or developing market	.780	.710
Obtain a window on a new technology	.704	.645

Measures of Overall Fit
Composite reliability .... .852
Variance extracted 59.3%
T-Values Significant 4/4
Residual values > 2 .... 0/6
Coefficient alpha .... .852

Logistics Benefits

Pretest Scale. The Logistics Benefits subconstruct consisted originally of five indicators as shown in Table 4.10. In the exploratory factor all logistics benefit items loaded well on a single subconstruct as theorized (.84, .83, .71, .66, .61). The alpha value for the five-item solution was .82, and the five-indicator CFA model yielded these results: GFI, .876; AGFI, .628; composite reliability, .83; variance extracted of 51%; all t-values are significant, and 10% of the normalized residuals exceeded ± 2. Despite the fraction of offending residuals (10%), the other statistics indicated very good fit.

During the pretest a respondent suggested an idea that was incorporated into the final questionnaire. The respondent indicated that in the distribution industry, the notion of *reductions in total procurement costs* was reflective of the logistics benefits received from engaging in buyer-seller relationships. Consequently, an item representing reduction in total procurement costs was developed and incorporated into the final questionnaire as shown in Table 4.12 (the sixth indicator).

Full Study Scale. The results of the full study (Table 4.12) confirmed the veracity of including the new indicator. The reliability estimates for the six-item model improved to .856 and .854, while the variance extracted remained high at approximately 51%. All other statistics and indexes supported claims of construct validity for this scale.

Conclusions. The six-item logistics benefits scale exhibited adequate levels of construct validity results to justify its incorporation into the test of the structural model. However, as noted above, parsimony considerations dictated that only one construct be adopted.

TABLE 4.12
CONSTRUCT VALIDITY TESTS—FULL STUDY
LOGISTICS BENEFITS

LOGISTICS BENEFITS ITEM	CFA LOADING	ITC
Reduce our manufacturing costs	.635	.618
Reduce our warehousing costs	.913	.754
Reduce our distribution/transportation costs	.853	.719
Reduce the level of inventory needed to the customer	.676	.588
Reduce waste materials	.507	.516
Reduce our total delivered cost to the customer	.602	.666

Measures of Overall Fit
Composite reliability 856
Variance extracted 50.7%
T-Values Significant 6/6
Residual values > 2 . . . . 1/15
Coefficient alpha 854

Product Benefits.

Pretest Scale. The product benefits subconstruct was initially theorized to comprise two indicators as shown in Table 4.10. In the exploratory factor analysis the two product benefit measures loaded well (.95, .92) on a single product benefits subconstruct. The coefficient alpha value for the two-item solution was .91. The two-indicator scale was accepted for use in the full test.

Full Test Scale. The results for the full test are reported in Table 4.13. The composite and coefficient alpha reliabilities were .865 and .810, respectively.

TABLE 4.13
CONSTRUCT VALIDITY TESTS—FULL STUDY
PRODUCT BENEFITS

PRODUCT BENEFITS ITEM	CFA LOADING	ITC
Improve the quality of an existing product	1.00	.682
Improve the performance of an existing product	.676	.682

Measures of Overall Fit
Composite reliability 865
Variance extracted . . . . NE
T-Values Significant . . . . NE
Residual values > 2 . . . . NE
Coefficient alpha 810

Conclusions. This scale demonstrated acceptable construct validity results for possible inclusion in the test of the structural model.

Overall Benefits.

Pretest Scale. Overall benefits consisted originally of four indicators as shown in Table 4.10. In the exploratory factor analysis three of the four overall benefit measures loaded moderately well (.92, .90, .52) on a single subconstruct while the other indicator (solidarity) formed its own single-item subconstruct (.92). The alpha value for the four-item solution was .72, and the four-indicator CFA model yielded these results: GFI, .97; AGFI, .865; composite reliability, .73; variance extracted of 47%; three t-values are significant, and none of the normalized residuals exceeded ± 2.

The lowest loading measure was eliminated and the model reestimated with these results: composite reliability, .82; variance extracted of 55%; and all t-values are significant.

The coefficient alpha for this three-item scale was .79. Because of the improved reliability and extracted variance, the three-indicator scale was adopted for use in the full test.

Full Test Scale. The results for this test are provided in Table 4.14. The reliability estimates were .829 and .822, respectively, and all loadings were relatively large and uniform.

TABLE 4.14
CONSTRUCT VALIDITY TESTS—FULL STUDY
OVERALL BENEFITS

OVERALL BENEFITS ITEM	CFA LOADING	ITC
Substantially increase our market share	.769	.684
Increase our volume and revenues with this customer	.926	.765
Substantially increase our total profit	.648	.596

Measures of Overall Fit
Composite reliability 829
Variance extracted 62.3%
T-Values Significant 3/3
Residual values > 2 . . . . NE
Coefficient alpha 822

Conclusions. Based on these solid results, the Overall Benefits scale was selected for inclusion in the testing of the structural model.

Overall Conclusions—Benefits

The Benefits concept represents an example of the need to compromise between parsimony and richness in selecting constructs for the structural model. In this case the decision is made on the side of parsimony. One construct, Overall Benefits, was selected for use in the final model. This concept was designed to encompass the composite expression of strategic, technical, and operating benefits that represent the "successful" relationship. Measures addressing broad goals such as increases in market share, volume, revenue, and profit were intended to embody the "global" concept of beneficial outcomes. Accordingly, this scale was judged to be an appropriate scale to represent the overall benefits of the relationship.

Switching Costs

The Switching Costs construct was originally theorized to consist of three subconstructs: investments in Lasting Assets, People, and Procedures (see Chapter 2). Exploratory factor analysis from pretest data was conducted on a data matrix comprising measures for all switching cost subconstructs. A total of four dimensions was extracted. An inspection of this solution revealed that the first dimension was composed principally of fixed asset, product modification, and supply contract measures, and the second primarily, of people and procedure measures. The third dimension consisted of only two indicators, one people and one procedure. The final dimension consisted of three mixed measures (procedure, fixed assets, and contract) with no discernible conceptual pattern.

These exploratory factor results suggested the plausibility of a two-subconstruct switching costs model, each subconstruct subsequently labeled Hard Assets and Soft Assets. The Hard Assets subconstruct comprised the items representing investments in fixed assets plus those representing supply contracts and tailored modifications to the supplier's product. The Soft Assets subconstruct comprised the items representing investments in procedures and people.

This two-subconstruct representation of switching costs expressed a logic not unlike that hypothesized. Switching costs appeared to be perceived by respondents in terms of whether they are in tangible versus intangible investments. Respondents apparently do not distinguish between what was originally envisaged as "people" versus "procedure" investments. Because of this evidence, the two-subconstruct factor analysis solution was adopted and provided the basis of the ensuing analysis.

Hard Assets.

Pretest Scale. The eight indicators which were theorized to represent the hard assets construct are shown in Table 4.15. In the exploratory factor analysis six of the hard assets measures loaded reasonably well on a single hard assets subconstruct (loadings ranged from .54 to .81). The seventh and eighth indicators crossloaded on the hard assets factor subconstruct (.52, .07), but loaded primarily on the mixed-measure dimension (.62, .86). The eight-indicator CFA model yielded these results: GFI, .779; AGFI, .603; composite reliability, .88; variance extracted of 51%; all t-values are significant, and 7% of the normalized residuals exceeded ± 2. The measure contributing most to the excessive level of residuals, which also loaded relatively poorly (.40 in the CFA), was eliminated and the seven-indicator model reestimated with these results: GFI, .836; AGFI, .673; composite reliability, .89; variance extracted of 53%; all t-values are significant, and none of the normalized residuals exceeded ± 2. The coefficient alpha for this seven-item scale was .84. Because of these overall favorable results, the seven-indicator scale was selected for use in the full study.

Full Test Scale. The composite reliability and percent variance extracted of the seven-item scale were .867 and 49.0%, respectively, as shown in Table 4.16. All indicators had relatively large loadings which were also uniform across the scale.

Conclusions. Based on these results, this seven-item Hard Assets scale is selected for use in the structural model evaluation.

TABLE 4.15
CONSTRUCT VALIDITY TEST—PRETEST
SWITCHING COSTS

	Fit Statistics		
	Overall Construct	**Initial Subconstruct**	**Final Subconstruct**
Construct—SWITCHING COSTS	(.890)		
Subconstruct/Item			
Hard Assets		(.884)	(.892)
We have significant investment in production facilities (plant) dedicated to supplying this particular customer	.711	.696	.723
We have significant investment in shipping and distribution equipment tailored to supplying this customer	.814	.736	.765
We have a plant that produces product tailored to the specific performance needs of this customer	.605	.614	.700
Our production system has been tailored to using the particular products supplied to this customer	.397	.523	Drop
We have contractually dedicated a portion of our plant to producing product only for this customer	.637	.728	.710
We have a full or partial requirements product supply agreement with this customer	.556	.519	.551
We have significantly adapted our product to the performance needs or specifications of this customer	.756	.899	.879
We have based our product's specifications on this customer's specific application needs	.770	.830	.818

(Continued)

	Fit Statistics		
	Overall Construct	Initial Subconstruct	Final Subconstruct
Soft Assets		(.769)	(.879)
Our plant and distribution people have developed close working relationships with the customer	.689	.873	.884
Because of the close working relationships we have with this customer, it would be difficult to switch to another customer .	.305	.366	.371
Personnel from our firm have become accustomed to working with this customer	.644	.747	.734
We have an extensive working relationship with this customer	.747	.921	.929
Others in my organization have spent a lot of time working with this customer	.394	.496	.456
It takes a lot of time and effort to learn the "ins and outs" of this customer's organization that we need to know to be effective	.151	-.183	Drop
We have established special communications channels (phone, computer, etc.) to streamline our working with this customer	.621	.760	.739
We are in a position to acquire sensitive information about this customer	.420	.509	.512
It takes a long time before the customer knows how to work effectively with our system	.146	-.026	Drop
A lot of the tasks we perform for this customer require close coordination with their people	.480	.173	Drop

Note: Values represent lambda coefficients from CFA; values in parentheses are construct/subconstruct composite reliabilities.

TABLE 4.16
CONSTRUCT VALIDITY TESTS—FULL STUDY
HARD ASSETS

HARD ASSETS ITEM	CFA LOADING	ITC
We have a significant investment in shipping and distribution equipment tailored to supplying this customer	.519	.483
We have significantly adapted our product to the performance needs or specifications of the customer	.780	.699
We have a full or partial requirements product supply agreement with this customer	.558	.535
We have based our product's specifications on this customer's specific needs	.811	.729
We have a plant that produces product tailored to the specific performance needs of this customer	.818	.731
We have a significant investment in production facilities (plant) dedicated to supplying this particular customer	.754	.705
We have contractually dedicated a portion of our plant to producing product only for this customer	.586	.554

Measures of Overall Fit

Composite reliability	.867
Variance extracted	49.0%
T-Values Significant	7/7
Residual values > 2	0/21
Coefficient alpha	.863

Soft Assets

Pretest Scale. The soft assets construct initially consisted of ten indicators as shown in Table 4.15. The ten-indicator CFA model yielded these results: GFI, .762; AGFI, .625; composite reliability, .80; variance extracted of 35%; two of the t-values are nonsignificant, and 13% of the normalized residuals exceeded ± 2. In the exploratory factor analysis five of the soft assets measures loaded reasonably well on the soft assets subconstruct (loadings ranged from .54 to .74) while the sixth indicator crossloaded moderately on the soft assets subconstruct (.43), but also crossloaded on the hard assets subconstructs (.58) and a non-theorized dimension (.57). Two of the remaining four soft asset measures formed a third dimension (.80, .74) and crossloaded poorly on the soft assets subconstruct (.04, .09). Of the final two soft asset measures, one loaded on the hard assets subconstruct (.59) and crossloaded moderately on the soft assets subconstruct (.40), and the second loaded on the mixed-measure dimension (.87) and crossloaded poorly on the soft assets subconstruct (.13).

Inspection of the CFA solution indicated that three measures had a combination of low loadings (.18, .03, .17) and high contribution to the level of offending residuals. These items were eliminated and the resulting seven-item model reestimated with these results: GFI, .960; AGFI, .906; composite reliability, .88; variance extracted of 52%; all t-values are significant, and none of the normalized residuals exceeded ± 2. The coefficient alpha for this six-item scale was .83. The seven-indicator scale evidenced substantial improvement over the initial ten-item scale and was adopted for use in the full study.

Full Test Scale. As the results in Table 4.17 portray, the seven-item scale had composite and coefficient alpha reliability estimates of .760 and .742, respectively, with a variance extracted estimate of 33.1%. An inspection of the individual indicators indicated that the second exhibited poor fit (loading of .233 and ITC of .254). This item was eliminated and the model reestimated with these results: composite reliability of .766, coefficient alpha of .771, and variance extracted of 37.7%. The individual loadings and ITCs range from .456 to .755 in value.

TABLE 4.17
CONSTRUCT VALIDITY TESTS—FULL STUDY
SOFT ASSETS

SOFT ASSETS—Initial

ITEM	CFA LOADING	ITC
We have established special communications channels (phone, computer, etc.) to streamline our working with this customer	.457	.424
Because of our close working relationship we have with this customer, it would be difficult to switch to another customer	.233	.254
Personnel from our firm have become accustomed to working with this customer	.698	.556
We are in a position to acquire sensitive information about this customer	.481	.533
We have an extensive working relationship with this customer	.735	.535
Others in my organization have spent a lot of time working with this customer	.586	.537
Our plant and/or distribution people have developed close working relationships with the customer	.668	.560

<u>Measures of Overall Fit</u>
Composite reliability 760
Variance extracted 33.1%
T-Values Significant 7/7
Residual values > 2 . . . . 1/21
Coefficient alpha 742

(Continued)

SOFT ASSETS—Respecified

ITEM	CFA LOADING	ITC
We have established special communications channels (phone, computer, etc.) to streamline our working with this customer	.456	.444
Personnel from our firm have become accustomed to working with this customer	.703	.555
We are in a position to acquire sensitive information about this customer	.460	.479
We have an extensive working relationship with this customer	.755	.597
Others in my organization have spent a lot of time working with this customer	.579	.572
Our plant and/or distribution people have developed close working relationships with the customer	.656	.561

Measures of Overall Fit
Composite reliability 766
Variance extracted 37.7%
T-Values Significant 6/6
Residual values > 2 . . . . 0/15
Coefficient alpha 771

Conclusions. These results indicated that the this scale, while perhaps not the strongest developed, displayed adequate levels of construct validity for incorporation into the structural model test.

Overall Conclusions—Switching Costs

The Switching Costs concept was one of the two selected for investigation at the subconstruct level in the SubCLS Model (see the discussion above under "Construct Selection for the Two Empirical Models"). The selection of the Hard Assets subconstruct to represent the Switching Costs concept in the CLS Model requires a brief explanation. In the literature, "specific assets," are conventionally conceptualized in terms very much like those used to represent the Hard Assets subconstruct in this study. The "people" orientation, expressed in this study's Soft Assets formulation, is largely absent in these perspective. For instance, Heide and John characterize specific investments as "tools, equipment, operating procedures, and systems that are tailored for use with specific firms" (1990, p. 27). Consequently, current convention was followed by incorporating the Hard Assets subconstruct into the CLS Model. This enabled an extension of existing empirical research in the study.

Cooperation

The concept of Cooperation was theorized to consist of four subconstructs: Global Cooperation, Sharing, Flexibility, Joint Working and Harmony. From the pretest analysis, the cooperation measures taken together evidenced a coefficient alpha value of .81, as shown in Table 4.18, but the CFA model was not evaluable due to nonconvergence. The exploratory factor analysis, which was conducted on a data subset comprising measures of the cooperation subconstructs, resulted in the extraction of six dimensions. Four of these dimensions corresponded well to theorized subconstructs: Global, Sharing, Harmony, and Joint Working. The remaining two dimensions represented a mix of measures with no distinguishable conceptual identification. Each subconstruct will be evaluated next.

Global.

Pretest Scale. The three items which were originally theorized to portray the Global Cooperation subconstruct are shown in Table 4.18. In the exploratory factor analysis the three global measures loaded well on a single subconstruct (.91, .90, .88) and crossloaded only minimally. The alpha value for the three-item solution was .91, and the three-indicator CFA model yielded these results: composite reliability, .92; variance extracted of 79%; and all t-values are significant. The three-indicator scale appears to represent this concept well and was accepted for full study questionnaire.

TABLE 4.18
CONSTRUCT VALIDITY RESULTS—PRETEST
COOPERATION

	Fit Statistics		
	Overall Construct	Initial Subconstruct	Final Subconstruct
Construct—COOPERATION	(.813)*		
	MLE not Evaluable		
Subconstruct/Item			
Global			
(A) My firm...		(.920)	(.920)
Cooperates		.895	.895
Collaborates		.823	.823
Tries to work together in a spirit of "teamwork		.947	.947
Sharing		(.890)*	(.890)*
Willingly provides important strategic, technical, and operating information if needed for the project's success		NE	NE
Willingly provides proprietary information		NE	NE
Flexibility		(.479)	New Scale; See Below
Uses "give and take" to adjust to changing circumstances		.638	
Readily accommodates to the customer's needs when things outside our control change		.940	
Rarely changes direction once we have decided on a course of action (R)		.296	

(Continued)

	Fit Statistics		
	Overall Construct	Initial Subconstruct	Final Subconstruct
(B) The two groups together...			
Joint Working		(.700)	(.700)
Make all important project technical and operating decisions together		.657	.657
Jointly decide on the goals and objectives of the project		.534	.534
Mutually agree before making major strategic, technical, or operating decisions for the project		.596	.596
Solve the project's technical and operating problems as a joint effort		.597	.597
Harmony		(.730)	(.821)
Resolve conflicts amicably		.810	.762
Handle project-related problems or differences congenially		.861	.938
Frequently resort to our operating contract to resolve problems or differences (R)		-.249	Drop
Frequently call on top management for intervention to resolve problems or differences (R)		-.659	-.623
Tries to use "power tactics" to get our/their way (R)		-.298	Drop

(continued)

<u>**Replacement items for respecified Flexibility construct**</u>

(Adapted from Noordewier, John, and Nevin, 1990)
My firm....

Is flexible in response to requests from the customer.

Adjusts to meet unforseen needs that might occur.

Handles change well.

(From original scale)
Readily accommodates to the customer's needs when things outside our control change.

Notes: (1) Values represent lambda coefficients from CFA; values in parentheses, construct/subconstruct composite reliabilities.
(2) NE: Not evaluable; insufficient number of indicators.
(3) Asterisk indicates value for coefficient alpha.
(4) (R) indicates negatively worded item only; scale in CFA is not reversed.

Full Test Scale. The three-item scale evaluation results are reported in Table 4.19. The reliability estimates were .876 and .861, respectively, the variance extracted was 70.4%, and the indicator loadings were uniformly large.

Conclusions. These very solid results suggested that adoption of the Global scale in the structural model evaluation would be warranted.

Sharing

Pretest Scale. The Sharing subconstruct initially comprised two indicators as shown in Table 4.18. In the exploratory factor analysis the two sharing measures loaded well on a single subconstruct (.90, .88), which had an alpha coefficient value of .89. Based on these results, the two-indicator sharing scale was adopted for the full study.

TABLE 4.19
CONSTRUCT VALIDITY TESTS—FULL STUDY
COOPERATION—GLOBAL

GLOBAL COOPERATION ITEM	CFA LOADING	ITC
Cooperates	.903	.788
Collaborates	.796	.700
Tries to work together in a spirit of teamwork	.814	.723

Measures of Overall Fit
Composite reliability 876
Variance extracted 70.4%
T-Values Significant 3/3
Residual values > 2 . . . . NE
Coefficient alpha 861

Full Test Scale. Table 4.20 display the full study results for this scale. The composite reliability estimate was .751 and the coefficient alpha, .620. The loading values, at 1.00 and .503 were not uniform and the ITCs (.484) somewhat low.

Conclusions. Although this scale demonstrated marginal construct validity results, it would have been adequate for incorporation into the structural model had parsimony considerations warranted.

Flexibility

Pretest Scale. Flexibility was originally conceptualized as three-indicator model as shown in Table 4.18. In the exploratory factor analysis the three flexibility measures did not load to a given dimension and crossloaded significantly. One flexibility measure loaded at .88 on the two-item mixed dimension, while the other two loaded at .57 and .56, respectively, on the five-item mixed dimension. The alpha value for the three-item solution was .03, and the three-indicator CFA model yielded these results: composite reliability, .48; variance extracted of 46%; and all t-values are significant. These poor results indicated the need to adopt a revised scale. As noted in Table 4.18, the new flexibility scale was incorporated into the questionnaire for the full study.

TABLE 4.20
CONSTRUCT VALIDITY TESTS—FULL STUDY
COOPERATION—SHARING

SHARING ITEM	CFA LOADING	ITC
My firm's group... Willing provides important strategic, technical and operating information if needed for the project's success	1.00	.484
Willingly provides proprietary information	.503	.484

Measures of Overall Fit
Composite reliability 751
Variance extracted 62.5%
T-Values Significant . . . . NE
Residual values > 2 . . . . NE
Coefficient alpha 620

Full Study Scale. The new four-indicator flexibility scale demonstrated much improved results as exhibited in Table 4.21. The composite reliability improved to .841, the variance extracted was 57.3%, and all items were uniform and large in value.

Conclusions. Based on these results, the flexibility scale would have been a suitable candidate for use in the test of the structural model.

TABLE 4.21
CONSTRUCT VALIDITY TESTS—FULL STUDY
COOPERATION—FLEXIBILITY

FLEXIBILITY

ITEM	CFA LOADING	ITC
Is flexible in response to requests from this customer	.739	.683
Adjusts to meet unforseen needs that might occur	.761	.675
Readily accommodates to the customer's needs	.797	.719
Handles change well	.718	.651

<u>Measures of Overall Fit</u>

Composite reliability	.841
Variance extracted	57.3%
T-Values Significant	4/4
Residual values > 2	0/6
Coefficient alpha	.844

Joint Working

Pretest Scale. The subconstruct joint working was originally theorized to comprise four indicators as shown in Table 4.18. The four-indicator CFA model yielded these results: GFI, .949; AGFI, .712; composite reliability, .69; variance extracted of 36%; all t-values are significant, and none of the normalized residuals exceeded ± 2. The coefficient alpha for this four-item scale was .69. In the exploratory factor analysis the two of the joint working measures loaded reasonably well on a single joint working subconstruct (.91, .66) while other two indicators crossloaded on this subconstruct (.45, .38), but loaded moderately on the five-item, mixed-measure dimension (.56, .61).

These results represent only marginal validation of the joint working scale. Two potentially interrelated problems could explain this difficulty: the marginal results were caused by either a conceptual problem (is there in fact such a concept, joint working?) or a construct operationalization problem. Prior studies suggest the latter. The literature on psychometric development of concepts similar to cooperation (e.g., relational "syndrome," (Noordewier et al. 1990) and relational norms (Kauffman and Dant 1991)) suggests that operationalization of these nebulous constructs is inherently problematic. Empirical research efforts directed toward the conceptualization, formulation, and operationalization of these and similar "relational" concepts are in an early stages of development. Advancement in the area will require additional effort in the field. The present study can be considered such an effort. Consequently, despite its preliminarily marginal results, the four-indicator scale was retained for use in the full study.

Full Test Scale. As indicated by the results presented in Table 4.22, the decision to retain the Joint Working scale was sound. The reliability estimates improved were .802 and .808, respectively, with a variance extracted of 50.5%. The construct loadings are quite adequate, ranging from .640 to .766.

Conclusions. The Joint Working scale, with its much improved results, was an acceptable candidate for inclusion in the test of the structural model had parsimony considerations warranted.

Harmony

Pretest Scale. Harmony was initially envisaged to be a subconstruct consisting of five indicators as shown in Table 4.18. In the exploratory factor analysis three of the five harmony measures loaded cleanly on a single harmony subconstruct (.86, .83, .71) while the other two harmony indicators crossloaded poorly on the harmony subconstruct (.14, .22). One of these two problem indicators loaded well on the first mixed dimension (.81) and the other loaded on the second mixed dimension (.88). The five-indicator CFA model yielded these results: GFI, .856; AGFI, .569; composite reliability, .73; variance extracted of 40%; all t-values are significant, and 10% of the normalized residuals exceeded ± 2.

TABLE 4.22
CONSTRUCT VALIDITY TESTS—FULL STUDY
COOPERATION—JOINT WORKING

JOINT ITEM	CFA LOADING	ITC
The two groups together...		
Make all important project technical and operating decisions together	.664	.621
Jointly decide on the goals and objectives of the project	.766	.645
Mutually agree before making major strategic, technical, or operating decisions for the project	.760	.652
Solve the project's technical and operating problems as a joint effort	.640	.584

Measures of Overall Fit
Composite reliability 802
Variance extracted 50.5%
T-Values Significant 4/4
Residual values > 2 . . . . 0/6
Coefficient alpha 808

The two problems indicators (which loaded at only -.25 and -.30 in the CFA) were eliminated and the resulting three-item model reestimated with these results: composite reliability, .82; variance extracted of 62%; and all t-values are significant, with a coefficient alpha of .80. The three-indicator scale, which evidenced considerable improvement over the five-item original, appears to capture the domain of the harmony construct adequately. Consequently, it was adopted for use in the full test.

Full Test Scale. In the CFA, the theta-delta matrix was not positive definite. Consequently the overall fit of the model is not evaluable. For completeness the loading values are reported in Table 4.23. The coefficient alpha was .491 and the ITCs widely divergent in value (ranging from .090 to .534).

TABLE 4.23
CONSTRUCT VALIDITY TESTS—FULL STUDY
COOPERATION—HARMONY

HARMONY ITEM	CFA LOADING	ITC
The two groups together... Resolve conflicts amicably	1.769	.534
Handle project-related problems or differences congenially	.454	.445
Frequently call on top management for intervention to resolve problems or differences	.091	.090

Measures of Overall Fit

Measure	Value
Composite reliability	NA
Variance extracted	NA
T-Values Significant	NA
Residual values > 2	NA
Coefficient alpha	.491

Conclusion. The failure of the CFA model to complete the parameter estimations and the poor coefficient alpha and ITC results indicated that this scale may not represent the construct Harmony. The scale was rejected for use in the structural model evaluation.

Overall Conclusions -- Cooperation

The Global Cooperation subconstruct, which exhibited satisfactory psychometric results, was selected for incorporation into the structural model test. According to the cooperation theory developed in this study, the global subconstruct encompassed all the specific cooperative behaviors represented as first order factors in the cooperation model. Parsimony prevented the investigation of the individual cooperative behavior subconstructs. The structual model test would have become unwieldy as a result of the large number of path coefficients to be estimated with a three- or four- subconstruct representation of cooperation.

Coordination

The Coordination construct consisted of three subconstructs: Formal Mechanisms, Top Management Involvement, and Working Agreements. In the pretest analysis, the composite of Coordination measures evidenced a composite reliability of .78 with the loadings shown in Table 4.24. The wide variation in loading values across indicators indicates that the composite construct does not represent a single overall Coordination concept. Consequently this composite model will not be investigated further.

Exploratory factor analysis, which was conducted on a data subset comprising the Formal Mechanisms, Top Management Involvement, and Working Agreements measures, extracted four dimensions. Three of these dimensions closely reflected the three theorized subconstructs while the fourth was a single-item (top management involvement) factor. Each subconstruct will be evaluated next.

TABLE 4.24
CONSTRUCT VALIDITY TESTS—PRETEST
COORDINATION

	Fit Statistics		
	Overall Construct	**Initial Subconstruct**	**Final Subconstruct**
Construct -- COORDINATION	(.784)		
My firm/and the customer...			
Formal Methods		(.876)	(.876)
Has organized a formal team to coordinate the activities of our functional participants	.926	.925	.925
Has simply put together an informal team to coordinate the activities of our functional participants (R)	-.792	-.807	-.807
Has specified a "coordinator" who is in charge of our internal team	.519	.512	.512
Have a formal joint-company team to organize interactions between firms .	.468	.813	.813
Have an informal joint-company team to organize interactions between firms (R)	.342	-.734	-.734
Top Management Involvement		(.781)	(.848)
Has at least one top manager who provides direction and guidance to our internal team	-.722	.040	Drop
My firm's top management are very supportive of our Relationship Project with the customer	.236	.572	.575
Managers from both sides (my firm and the customer) discuss our Relationship Project	.058	.887	.883

(Continued)

	Fit Statistics		
	Overall Construct	Initial Subconstruct	Final Subconstruct
Top managers from my firm know top managers of the customer very well . .	-.069	.879	.882
Working Agreement		(.553)	(.553)
Have a formal working agreement (in writing) which specifies the project's goals	.289	.247	.247
Have a formal working agreement (in writing) which specifies that proprietary information provided by either partner will be kept secret ...	.411	.358	.358
Have a formal working agreement (in writing) which specifies how the project is to be governed in the event of disagreement	.318	.940	.940

Notes: (1) Values represent lambda coefficients from CFA; values in parentheses are construct/subconstruct composite reliabilities.
(2) (R) indicates negatively worded item only; scale is not reversed in CFA.

Formal Mechanisms

Pretest Scale. Formal Mechanisms concept was theorized to comprise five indicators as shown in Table 4.24. In the exploratory factor analysis all five formal mechanism measures loaded well (.87, .87, .84, .82, .53) on a single subconstruct. The alpha value for the five-item solution was .86, and the five-indicator CFA model yielded these results: GFI, .899; AGFI, .697; composite reliability, .88; variance extracted of 59%; all t-values are significant, and none of the normalized residuals exceeded ± 2. The five-indicator scale was adopted for use in the full study.

Full Test Scale. The results for this evaluation are reported in Table 4.25. The reliability estimate was .750, and the variance extracted, 40.9%. However, five of fifteen, or 33%, of the residual values exceeded ± 2 in value. The problem indicators were eliminated (the third and fourth in Table 4.25), and the resulting 4-item model estimated as shown.

This model evidenced improved results with a composite reliability of .842 and a variance extracted of 57.7%.

TABLE 4.25
CONSTRUCT VALIDITY TESTS—FULL TEST
COORDINATION—FORMAL MECHANISMS

FORMAL MECHANISMS—Initial

ITEM	CFA LOADING	ITC
My firm... Has organized a formal team to coordinate the activities of our functional group participants	.838	.703
Has simply put together an informal team to coordinate the activities of our functional participants	-.824	.659
Has specified a "coordinator" who is in charge of our internal team	.309	.237
Has at least one top manager (at the GM, or higher level) who monitors the Project's activities, direction and performance	.214	.108
Have a formal joint-company team to organize interactions between firms	.747	.695
Have an informal joint-company team to organize interactions between firms	-.609	.548

Measures of Overall Fit

Composite reliability	.780
Variance extracted	40.9%
T-Values Significant	6/6
Residual values > 2	5/15
Coefficient alpha	.737

(Continued)

FORMAL -- Respecified

ITEM	CFA LOADING	ITC
My firm...		
Has organized a formal team to coordinate the activities of our functional group participants	.848	.709
Has simply put together an informal team to coordinate the activities of our functional participants	-.858	.708
Have a formal joint-company team to organize interactions between firms	.697	.706
Have an informal joint-company team to organize interactions between firms	-.605	.566

Measures of Overall Fit
Composite reliability 842
Variance extracted 57.7%
T-Values Significant 4/4
Residual values > 2 . . . . 1/6
Coefficient alpha 839

Conclusions. The original 6-item scale did not exhibit adequate evidence of construct validity. While the respecified 4-indicator model evidenced good psychometric properties, the elimination of the two items presented another problem. These two items represented important "substantive content" of the "conceptual domain" of the concept. Leadership from a team coordinator and from top management are essential qualities of the formal mechanisms concept. The elimination of these indicators was judged to render the respecified scale conceptually unsuited for use in the structural model test.

Working Agreement

Pretest Scale. The working agreement concept was theorized to be reflective of three indicators as shown in Table 4.24. In the exploratory factor analysis the three working agreement measures loaded reasonably well on a single subconstruct (.71, .62, .56) and crossloaded only minimally (one measure crossloaded on the top management involvement subconstruct at .44). The alpha value for this three-item solution was .53, and the three-indicator CFA model yielded these results: composite reliability, .55; variance extracted of 36%; and all t-values are significant.

The explanation for these marginal results may lie in the nature of the pretest sample. The pretest survey was conducted primarily at the plant purchasing/supply level, albeit in some cases with large, multi-plant corporations (e.g., Dow Chemical). At this level, although supply agreements are frequently utilized, there may be little need for project (working) agreements because of the narrower, supply-distribution nature of the relationships. The full study was conducted with supplier firms primarily at the corporate level. Relationships at this level may focus more on broad, strategic and technical objectives of the firm, encompassing wider functional participation, and necessitating greater resource commitment and expenditures. At this level, there may be a greater need to employ project working agreements that dictate the handling of proprietary information, project goals, and the like. Because of these substantive considerations, the three-indicator agreement scale was retained for use in the full study.

Full Study Scale. As reported in Table 4.26, the reliabilities for this scale are .662 and .641, respectively. The variance extracted was 40.1% and the loadings are modest in magnitude.

Conclusions. Although there was modest improvement from the pretest to full study results, this scale was judged to demonstrate, at best, marginal construct validity results. An examination of the descriptive statistics from the full study indicated that approximately one-half the respondent firms reported use of a project working agreement. Nevertheless, it can be concluded that if a valid concept referred to as "Working Agreement" exists, the scale devised in this study failed to represent its substantive domain. Consequently, this scale was not deemed a candidate for the structural model assessment.

TABLE 4.26
CONSTRUCT VALIDITY TESTS—FULL STUDY
WORKING AGREEMENT

USE OF WORKING AGREEMENT

ITEM	CFA LOADING	ITC
The customer and my firm together...		
Have a formal working agreement (in writing) which specifies the project's goals	.522	.411
Have a formal working agreement (in writing) which specifies that proprietary information provided by either partner will be kept secret	.596	.442
Have a formal working agreement (in writing) which specifies how the project is to be governed in the event of disagreement	.757	.513

<u>Measures of Overall Fit</u>
Composite reliability .662
Variance extracted . 40.1%
T-Values Significant 3/3
Residual values > 2 NE
Coefficient alpha . . .641

Management Involvement

Pretest Scale. A set of four indicators was initially used to represent the management involvement subconstruct as shown in Table 4.24. The four-indicator CFA model yielded these results: GFI, .875; AGFI, .624; composite reliability, .78; variance extracted of 47%; one t-value nonsignificant, and 10% of the normalized residuals exceeded ± 2. In the exploratory factor analysis three of the four management involvement measures loaded well on a single management involvement subconstruct (.88, 72, .64) while the other indicator constituted its own subconstruct (.87) and cross loaded poorly on the management involvement subconstruct (.01). The offending measure was eliminated and the resulting three-item model reestimated with these results: GFI of .986, AGFI of .932, composite reliability, .85; variance extracted of 59%; all t-values are significant, and none of the normalized residuals exceeded ± 2. The coefficient alpha for the three-indicator scale was .81. Based on these sound results, the three-indicator scale was adopted for use in the full study.

Full Test Scale. As presented in Table 4.27, the composite reliability estimate for this scale was .731, with a variance extracted of 49.6%.

TABLE 4.27
CONSTRUCT VALIDITY TESTS—FULL STUDY
MANAGEMENT INVOLVEMENT

MANAGEMENT INVOLVEMENT ITEM	CFA LOADING	ITC
My firm's top management are very supportive of our Relationship Project with the customer	.431	.346
Managers from both sides (my firm and the customer) discuss our Relationship Project	.689	.605
Top managers from my firm know top managers of the customer very well	.512	.437

Measures of Overall Fit	
Composite reliability	.731
Variance extracted	49.6%
T-Values Significant	3/3
Residual values > 2	NE
Coefficient alpha	.634

Conclusions. This scale exhibited adequate results for inclusion in the test of the structural model and was adopted.

Overall Conclusions—Coordination

As noted above, Coordination was selected for investigation as a single-concept construct. From the results of the construct validity tests reported here, two scales were candidates for incorporation into the structural model evaluation: the respecified Formal Mechanisms scale and the Management Involvement scale. The Management Involvement scale has been chosen for this purpose. This scale evidenced a satisfactory level of construct validity and, moreover, fully represented the substantive domain of the concept.

On the other hand, the Formal Mechanisms scale, after being respecified, failed to capture the conceptual domain of the concept. The elimination of the two indicators removed substantive qualities (team leadership from a coordinator and from management) theorized to represent important aspects of the domain of the concept.

Intensity

Pretest Scale. The Intensity construct consisted initially of two subconstructs: Interaction Frequency and Interaction Count. As originally conceived, the scales for these subconstructs were absolute measures of frequency of interfirm communications and interactions and counts of participating individuals and functional groups (see Table 4.28). Inspection of the descriptive analysis results indicated that the frequency of interaction and counts of individuals and groups differed greatly across firms creating wide variances in these measures.

Consequently, the original scale incorporating <u>absolute</u> measures of frequency was discarded in favor of a scale using <u>relative</u> frequency of interaction measures, as presented in Table 4.28. The scale, a four-item measure, evidenced a coefficient alpha value of .93 in O'Hara's (1992) study of industrial buyer-seller relationships.

TABLE 4.28
INITIAL AND REVISED MEASURES OF INTENSITY

A. Initial Scale -- Pretest

Interaction Frequency

How often do project personnel from your firm meet as individuals, face-to-face with the customer?

How often do individual functional project personnel from your firm hold phone conversations with the customer?

How often do functional project personnel from your firm exchange written reports or letters with the customer?

Please indicate the frequency of the following activities.

How often do you have planned project meetings with the customer?

How often do functional project personnel from your firm meet as a group or team, face-to-face with the customer?

Interaction Count
Please indicate the approximate number of participants in your firm working on the project.

Please indicate the approximate number of participants from the customer working on the project.

Please indicate the particular functional groups from your firm and from the customer involved in the Relationship Project by checking off all those applicable below:

Functional Group Involved	Your Firm	Customer
R&D	☐	☐
Manufacturing Operations	☐	☐
Product Design/Engineering	☐	☐
Process Engineering	☐	☐
Logistics/Distribution	☐	☐
Marketing	☐	☐
Sales	☐	☐
Purchasing	☐	☐
Finance	☐	☐
Other (please specify)		

(continued)

B. Replacement Scale --Full Test (Adapted from O'Hara 1992, Mayo 1980):

Please indicate the extent to which the following statements apply to the relationship between your firm and the customer.

We interact constantly.

Compared to other accounts, we meet with this customer more frequently.

Our project team members interact with this customer more often than they do with other customers.

The firms' project teams meet frequently to discuss the project.

Full Test Scale. The results of the relative frequency scale evaluation are reported in Table 4.29. The composite and coefficient alpha reliability estimates were .727 and .720, respectively, and the variance extracted, 40.8%. The individual CFA loadings were moderately large and uniform in value.

TABLE 4.29
CONSTRUCT VALIDITY TESTS—FULL STUDY
INTENSITY—FREQUENCY

FREQUENCY ITEM	CFA LOADING	ITC
We interact constantly with the customer	.505	.435
Compared to other accounts, we meet with this customer more frequently	.692	.558
Our project team members interact with this customer more often than they do with other customers	.724	.615
The firms' project teams meet frequently	.604	.488

(Continued)

FREQUENCY ITEM	CFA LOADING	ITC
Measures of Overall Fit Composite reliability . . . . .727 Variance extracted . . . . 40.8% T-Values Significant . . . . 4/4 Residual values > 2 . . . . 0/6 Coefficient alpha 720		

Conclusions. This scale was accepted for use in the evaluation of the structural model since all statistical and index guidelines were met with only one exception, the variance extracted level (40.8%).

Product Importance

The product importance construct consisted of five subconstructs: Strategic Fit, Strategic Expectations, Logistics Expectations, and Product Expectations, and Overall measure of benefits. From the pretest analysis, all of the Product Importance measures combined evidenced a composite reliability of .784 and the loadings indicated in Table 4.30. Since the construct, product importance, was not theorized to be a single construct, it is not further analyzed.

TABLE 4.30
CONSTRUCT VALIDITY TESTS—PRETEST
PRODUCT IMPORTANCE

	Fit Statistics		
	Overall Construct	**Initial Subconstruct**	**Final Subconstruct**
Construct -- PRODUCT IMPORTANCE **Factor/Item**	Input matrix was not positive definite		
Strategic Fit Compared to our other products, this product fits into my firm's (or SBU's)...		(.890)	(.890)

(Continued)

	Fit Statistics		
	Overall Construct	Initial Subconstruct	Final Subconstruct
Strategic portfolio of products		.916	.916
Long-term, strategic plans		.915	.915
Core technology		.736	.736
Manufacturing process technology		.699	.699
Raw material base		.580	.580
Customer base		.793	.793
Distribution System		.437	.437
Strategic Expectations/Objectives		(.890)	(.900)
Enter a market segment or niche previously not supplied		.751	.775
Enter a new market for our firm (or SBU)		.796	.809
Obtain a window on a new or developing market		.816	.794
Obtain a window on a new technology		.871	.873
Develop a product new to our firm		.802	.789
Bring a product to market earlier than we would have otherwise		.479	Drop
Product Expectations		(.890)*	(.890)*
Improve the quality of an existing product		NE	NE
Improve the performance of an existing conduct		NE	NE

(Continued)

	Fit Statistics		
	Overall Construct	**Initial Subconstruct**	**Final Subconstruct**
Overall Expectations		(.700)	(.700)
Substantially increase our market share		.761	.761
Increase our volume and revenues with this customer		.467	.467
Substantially increase our total profit		.736	.736
Solidify competitive position with this important customer		.441	.441
<u>Logistics Expectations</u>		(.765)	(.765)
Reduce our manufacturing costs		.510	.510
Reduce our warehousing costs		.838	.838
Reduce our distribution costs		.508	.508
Reduce the level of inventory needed to supply the customer		.709	.709
Reduce waste materials		.538	.538

Notes: (1) Values represent lambda coefficients from CFA; values in parentheses, construct/subconstruct composite reliabilities.
(2) NE: Not evaluable; insufficient number of indicators.
(3) Asterisk indicates value for coefficient alpha.

Exploratory factor analysis was conducted on a data subset comprising these subconstructs: Strategic Fit, Strategic Expectations, Logistics Expectations, Product Expectations, and Overall Expectations. A total of seven dimensions was extracted. Of these, four corresponded very well to the theorized subconstructs, strategic fit, strategic expectation, product expectations, and overall expectations. The fifth and sixth dimensions loaded only with logistics expectations measures. The final, seventh, dimension was a mixed, two-item factor with no discernible substantive characteristics. Each subconstruct will be evaluated next.

Strategic Fit

Pretest Scale. Strategic Fit was initially conceived to be a seven- indicator scale as shown in Table 4.30. In the exploratory factor analysis six of the seven strategic fit measures loaded well on a single subconstruct (loadings ranging from .63 to .89). The seventh strategic fit measure loaded moderately on the mixed two-item dimension (.62) and crossloaded only minimally on the strategic fit subconstruct (.08). The alpha value for the seven-item solution was .87, and the seven-indicator CFA model yielded these results: GFI, .774; AGFI, .558; composite reliability, .89; variance extracted of 55%; all t-values were significant, and 5% of the normalized residuals exceeded ± 2.

The model's fit could probably have been improved by deleting the ill-fitting item (as indicated in the exploratory factor analysis and by the .44 loading in CFA). However, since the results of the seven-item model are sound and the measure is the only one addressing fit with the firm's logistics operations, the seven-indicator scale was retained for evaluation in the full test.

Full Test Scale. The results of the seven-indicator model are presented in Table 4.31. The reliability estimates are .875 and .877, with a variance extracted of 50.6%. The indicator CFA coefficient magnitudes are quite adequate (ranging from .500 to .790).

TABLE 4.31
CONSTRUCT VALIDITY TESTS—FULL STUDY
PRODUCT IMPORTANCE

PRODUCT FIT ITEM	CFA LOADING	ITC
Compared to our other products, this product fits into my firm's/SBU's...		
Strategic portfolio of products	.819	.789
Long-term strategic plans	.761	.733
Core technology	.790	.761
Raw material base	.683	.650

(continued)

PRODUCT FIT

ITEM	CFA LOADING	ITC
Customer base	.755	.727
Distribution system	.613	.583
Manufacturing process	.500	.488

Measures of Overall Fit

Composite reliability	.875
Variance extracted	50.6%
T-Values Significant	7/7
Residual values > 2	1/21
Coefficient alpha	.877

Conclusions. Results from both the pretest and full test support claims of construct validity for this scale. Had parsimony considerations permitted, it would have been a candidate for inclusion in the structural model evaluation.

Strategic Objectives

Pretest Scale. The Strategic Expectations subconstruct consisted originally of six indicators as shown in Table 4.30. In the exploratory factor analysis five of the six strategic expectations measures loaded well on a single subconstruct (loadings ranging from .75 to .91) while the other indicator loaded on the mixed two-item dimension (.83), and crossloaded somewhat (.32) on the strategic expectations subconstruct. The six-indicator CFA model yielded these results: GFI, .794; AGFI, .518; composite reliability, .89; variance extracted of 58%; all t-values significant, and none of the normalized residuals exceeded ± 2. The lowest loading measure (loading at .48 in the CFA) was eliminated and the resulting five-item model reestimated with these results: GFI of .814, AGFI of .442, composite reliability, .85; variance extracted of 59%; and all t-values are significant, with a coefficient alpha of .81. The five-indicator scale was adopted for use in the full study since it appears to adequately represent the strategic objectives subconstruct.

Full Test Scale. The results are presented in Table 4.32. The initial five-item model had a composite reliability estimate of .827 and a variance extracted of 48.0%.

However, the inspection of the indicator CFA loadings and ITCs indicated that the magnitude of the fifth item was a potential problem. Accordingly, this item was eliminated and the respecified model estimated. The results for this four-indicator scale were reliability estimates of .831 and .821, respectively, with a variance extracted of 56.0%.

TABLE 4.32
CONSTRUCT VALIDITY TESTS—FULL STUDY
STRATEGIC OBJECTIVES

STRATEGIC OBJECTIVES—Initial

ITEM	CFA LOADING	ITC
Enter a market segment or niche previously not supplied	.811	.654
Enter a new market for our firm (or SBU)	.860	.676
Obtain a window on a new or developing market	.754	.701
Obtain a window on a new technology	.528	.514
Develop a product new to our firm	.384	.402

Measures of Overall Fit
Composite reliability 827
Variance extracted 48.0%
T-Values Significant 5/5
Residual values > 2 . . . . 0/10
Coefficient alpha 803

STRATEGIC OBJECTIVES—Respecified

ITEM	CFA LOADING	ITC
Enter a market segment or niche previously not supplied	.812	.669
Enter a new market for our firm (or SBU)	.860	.709
Obtain a window on a new or developing market	.749	.732

(Continued)

STRATEGIC OBJECTIVES—Respecified

ITEM	CFA LOADING	ITC
Obtain a window on a new technology	.511	.477

Measures of Overall Fit
Composite reliability .... .831
Variance extracted 56.0%
T-Values Significant 4/4
Residual values > 2 .... 1/6
Coefficient alpha .... .821

Conclusions. The respecified scale evidenced a satisfactory level of construct validity and, therefore, was a suitable candidate scale for incorporation into the structural model test.

Logistics Objectives

Pretest Scale. Logistics expectations was initially conceptualized as a single five-item subconstruct, as shown in Table 4.30. In the exploratory factor analysis the logistics expectations measures divided across two dimensions. Three of the five measures loaded on one logistics items-only construct (.56, .70, .77) and the two others on the second logistics items-only subconstruct (.71, .88). However, three of the five items crossloaded between these two subconstructs (.23, .34, .39), suggesting the possibility of a single subconstruct as theorized. The alpha value for the five-item solution was .76, and the CFA model yielded these results: GFI, .912; AGFI, .735; composite reliability, .77; variance extracted of 40%; all t-values were significant, and none of the normalized residuals exceeded ± 2.

The five-indicator scale was retained for use in the full test despite these somewhat poor summary results. The questionable fifth measure (loading at .51 in CFA) addresses the firm's improvements in *manufacturing* costs. In the pretest survey, the response to this item might have been confounded, since many of the pretest sample firms were distributors with no manufacturing operations. Consequently the judgment was made to retain this measure.

Full Test Scale. In the full test, the composite reliability increased to .854 and the variance extracted to 49.8% (see Table 4.33). All other statistics and indexes met guidelines. These improved were probably the partial result of the CFA loading estimate of the questionable indicator identified in the pretest increasing to a value of .590.

TABLE 4.33
CONSTRUCT VALIDITY TESTS—FULL STUDY
LOGISTICS OBJECTIVES

LOGISTICS OBJECTIVES ITEM	CFA LOADING	ITC
Reduce our manufacturing costs	.590	.541
Reduce our warehousing costs	.816	.677
Reduce our distribution/transportation costs	.850	.706
Reduce the level of inventory needed to the customer	.736	.665
Reduce waste materials	.566	.592
Reduce our total delivered cost to the customer	.626	.594

Measures of Overall Fit
Composite reliability .... .854
Variance extracted 49.8%
T-Values Significant 6/6
Residual values > 2 .... 0/15
Coefficient alpha .... .847

Conclusions. This scale exhibited solid psychometric properties in both the pretest and full test and, therefore, was suitable for possible inclusion in the evaluation of the structural model.

Product Objectives

Pretest Scale. The construct, product expectations, consisted of two indicators as shown in Table 4.30. In the exploratory factor analysis the two product expectations measures loaded well on a single subconstruct (.91, .87), which had an alpha coefficient value of .89. The two-indicator scale was retained for incorporation in the full test.

Full Test Scale. The full test results reported in Table 4.34 indicate that the reliability estimates are .863 and .804, for composite and coefficient alpha respectively.

TABLE 4.34
CONSTRUCT VALIDITY TESTS—FULL STUDY
PRODUCT OBJECTIVES

PRODUCT OBJECTIVES ITEM	CFA LOADING	ITC
Improve the quality of an existing product	1.00	.673
Improve the performance of an existing product	.660	.673

Measures of Overall Fit
Composite reliability 863
Variance extracted . . . . NE
T-Values Significant . . . . NE
Residual values > 2 . . . . NE
Coefficient alpha 804

Conclusions. This scale demonstrated results sufficient to warrant consideration in the structural model test.

Overall Objectives

Pretest Scale. Four indicators comprised the overall expectations construct as shown in Table 4.30. The four-indicator CFA model yielded these results: GFI, .990; AGFI, .950; composite reliability, .70; variance extracted of 38%; all t-values are significant, and none of the normalized residuals exceeded ± 2. The coefficient alpha for this four-item scale was .67. In the exploratory factor analysis all four overall expectations measures loaded uniformly on a single overall expectations subconstruct (.73, .71, .69, .61). Although the variance extracted level is below the guideline (38% versus 50%), the other fit statistics indicate adequate fit. Consequently the four-indicator scale was retained for evaluation in the full test.

Full Test Scale. The theta delta matrix was not positive definite for this CFA. The results reported in Table 4.35 are included for completeness only.

TABLE 4.35
CONSTRUCT VALIDITY TESTS—FULL STUDY
OVERALL OBJECTIVES

OVERALL OBJECTIVES ITEM	CFA LOADING	ITC
Substantially increase our market share	.503	.459
Increase our volume and revenues with this customer	1.11	.675
Substantially increase our total profit	.434	.409

Measures of Overall Fit
Composite reliability 760
Variance extracted 55.8%
T-Values Significant 3/3
Residual values > 2 . . . . NE
Coefficient alpha 687

Conclusions. The Product Objectives scale cannot be evaluated and was eliminated as a candidate for the structural model test.

Overall Conclusions—Product Importance

Five scales each representing a separate subconstruct reflecting the Product Importance concept were evaluated in this analysis. Four of these were found to be suitable candidates, based on construct validity assessment results, for inclusion in the test of the structural models. Two have been selected for this purpose, Strategic Objectives and Logistics Objectives. As noted above in the section describing the criteria for selecting subconstruct-level concepts, the inclusion of these constructs afforded a preliminary investigation of two possible types of industrial partnerships, strategic and logistics. The selection of the Strategic Objectives subconstruct to represent Product Importance in the CLS Model reflects its conceptual congruence with the predominant view of product importance in the industrial marketing literature (see Shapiro 1987a and 1987b).

Customer Importance

The customer importance construct consisted of four subconstructs: Customer Strength, Customer Capability, Customer Potential, and Global. Taken together, all customer dependence measures evidenced a composite reliability of .80 and the loadings indicated in Table 4.36. Exploratory factor analysis in the pretest was conducted on a data subset comprising measures for these subconstructs: Customer Strength, Customer Capability, Customer Potential, and Global. A total of six dimensions was extracted. Of these, two customer capability and two customer strength subconstructs could be identified. The remaining two dimensions consisted of mixed measures. Each subconstruct will be evaluated next.

TABLE 4.36
CONSTRUCT VALIDITY TESTS—PRETEST
CUSTOMER IMPORTANCE

	Fit Statistics		
	Overall Construct	Initial Subconstruct	Final Subconstruct
Construct—CUSTOMER IMPORTANCE	(.798)		
This customer...			
Customer Strength		(.802)	(.802)
Is technically very capable	.527	.613	.613
Is a very aggressive/effective marketer	.355	.440	.440
Has a reputation in its industry for being well managed	.500	.592	.592
Is a major competitive force in its industry	.594	.760	.760
Is a recognized leader in its industry	.553	.744	.744
Is one of the top three companies in its industry	.365	.598	.598
This customer has demonstrated an excellent knowledge of...			
Customer Capability		(.837)	(.837)
Its own manufacturing process technology	.323	.389	.389
Its own distribution system	.708	.801	.801
Its own products and their performance needs	.657	.780	.780
Its competitors and markets	.764	.668	.668

(Continued)

	Fit Statistics		
	Overall Construct	Initial Subconstruct	Final Subconstruct
Its own customers' product needs	.813	.877	.877
Customer Potential		(.591)	(.591)
Currently or potentially purchases A large percentage of our output of this product	.361	NE	NE
Currently or potentially purchases a significant quantity of other products which we supply	-.016	NE	NE
Global		(.690)	(.690)
Is now or is expected to be a Key/National Account	.104	NE	NE
Is a key element in the strategic plan for this SBU or business line	.192	NE	NE

Notes: (1) Values represent lambda coefficients from CFA; values in parentheses, construct/subconstruct composite reliabilities.
(2) Asterisk indicates value for coefficient alpha.

Customer Strength

Pretest Scale. The Customer Strength subconstruct was theorized to consist of six indicators as shown in Table 4.36. In the exploratory factor analysis three of the customer strength measures loaded well on a customer strength subconstruct

(.84, .74, .72), which also included one customer capability measure (.53). The fourth and fifth customer strength measures constituted a second customer strength subconstruct (.86, .57). Two of the five items also crossloaded between the two customer strength subconstructs (.51, .41) suggesting the possibility that a single subconstruct could adequately represent the customer strength concept. The sixth measure loaded on a independent subconstruct (.85) but also crossloaded somewhat on the customer strength subconstruct (.29). The alpha value for the six-item solution was .78, and the CFA model yielded these results: GFI, .903; AGFI, .773; composite reliability, .78; variance extracted of 40%; all t-values are significant, and none of the normalized residuals exceeded ± 2. Although one measure (market strength) loaded only moderately in the CFA (.44) and the variance extracted failed to meet the guideline, the six-indicator scale was retained for use in the full test. The other fit statistics were adequate and the problematic measure might prove to be more fitting in the full scale test.

Full Test Scale. The results are presented in Table 4.37. The reliability estimates were .857 and .833, with a variance extracted of 50.7%. All indicator loadings were large (ranging from .558 to .897 in magnitude) and fairly uniform.

TABLE 4.37
CONSTRUCT VALIDITY TESTS—FULL STUDY
CUSTOMER STRENGTH

CUSTOMER STRENGTH ITEM	CFA LOADING	ITC
This customer...		
Is technically very capable	.592	.540
Is a very effective marketer	.584	.589
Has a reputation in its industry for being well managed	.727	.700
Is a major competitive force in its industry	.831	.754
Is a recognized leader in its industry	.897	.765
Is one of the top three companies in its industry	.558	.341

<u>Measures of Overall Fit</u>

Composite reliability	.857
Variance extracted	50.7%
T-Values Significant	6/6
Residual values > 2	0/15
Coefficient alpha	.833

Conclusions. This scale demonstrated very good results in both the pretest and full test studies and therefore is suitable for inclusion in the test of the structural model.

Customer Capability

Pretest Scale. As shown in Table 4.36, five items were theorized to comprise the Customer Capability subconstruct. The alpha value for the five-item solution was .81, and the five-indicator CFA model yielded these results: GFI, .913; AGFI, .738; composite reliability, .84; variance extracted of 52%; all t-values are significant, and none of the normalized residuals exceeded ± 2. In the exploratory factor analysis three of the five customer capability measures loaded highly on a customer capability subconstruct (.88, .84, .82). The fourth crossloaded on the customer capability subconstruct (.53), but loaded on the customer strength subconstruct (.67). The fifth measure loaded on the mixed dimension (.85) and crossloaded somewhat on the customer capability subconstruct (.29).

Despite the marginal results for the fifth customer capability measure (loaded at .39 in the CFA and crossloaded in exploratory), the five-indicator scale will be retained for the full study since the other statistics indicated reasonable fit. Furthermore, this measure addressees the customer's manufacturing capabilities. In the pretest a majority of the survey respondents were purchasing personnel on the customer side of the relationship responding with respect to a supplier. Since many of the suppliers were distributors and, therefore, possessed no manufacturing facilities, this could represent a confounding factor in the pretest survey which would be present in the full scale test.

Full Study Scale. The results of the analysis of this five-item scale are contained in Table 4.38. The composite and coefficient alpha reliabilities estimates were .847 and .800, respectively with a variance extracted of 53.8%. All indicators were large and uniform in value (ranging from .690 to .772 in magnitude).

TABLE 4.38
CONSTRUCT VALIDITY TESTS—FULL STUDY
CUSTOMER CAPABILITY

CUSTOMER CAPABILITY ITEM	CFA LOADING	ITC
This customer has an excellent knowledge of...		
Its own manufacturing process technology	.621	.544
Its own distribution system	.690	.621
Its own products and performance needs	.772	.689
Its competitors and markets	.761	.670
Its own customers' product needs	.772	.616

Measures of Overall Fit	
Composite reliability	.847
Variance extracted	53.0%
T-Values Significant	5/5
Residual values > 2	0/10
Coefficient alpha	.800

Conclusions. The findings from both the pretest and full study suggest that claims of unidimensionality for this scale are sound. Consequently, it was candidate for use in the full study.

Customer Potential

Pretest Scale. Customer potential was originally conceived to be a two indicator concept as shown in Table 4.36. Exploratory factor analysis indicated that the two measures loaded well on a single subconstruct (.85, .84), which had an alpha coefficient value of .59. Despite the relatively poor alpha value, the customer potential scale was retained for investigation in the full study. As indicated in Chapter 2, a number of marketing theorists and practitioners suggest that the customer's potential to offer large volume sales is primary factor which motivating relationships. Furthermore, the low alpha value may merely reflect the fact that only two measures are involved.

Full Study Scale. The coefficient alpha resulting from the full study analysis was .448, and the ITC values .289 for each indicator, as shown in Table 4.39.

TABLE 4.39
CONSTRUCT VALIDITY TESTS—FULL STUDY
CUSTOMER POTENTIAL

CUSTOMER POTENTIAL ITEM	CFA LOADING	ITC
This customer... Currently or potentially purchases a large percentage of our output of this product	1.00	.289
Currently or potentially purchases a significant quantity of other products which we supply	.327	.289

Measures of Overall Fit	
Composite reliability	NE
Variance extracted	NE
T-Values Significant	NE
Residual values > 2	NE
Coefficient alpha	.448

Conclusions. In neither the pretest nor the full test did this scale meet the guidelines for unidimensionality demanded for incorporation in the structural model evaluation. Reflection on the nature of the indicators suggests a possible explanation. Many of the distributor firms are small and may supply no more than one product to their relationship customer. Consequently, the item addressing the supply (or potential supply) of ancillary products may have had little or no relevance to a large portion of the sample firms.

Customer Global

Pretest Scale. As shown in Table 4.36, the Customer Global subconstruct was theorized to consist of two indicators. In the exploratory factor analysis the two customer global measures loaded on separate subconstructs and crossloaded only minimally (.53, .31) on a single global subconstruct. However this two-indicator scale evidenced an marginally adequate coefficient alpha value of .69, and was retained for evaluation in the full study.

Full Test Scale. With a coefficient alpha of .633 in the full test, reported in Table 4.40, this scale improved little from the pretest results.

TABLE 4.40
CONSTRUCT VALIDITY TESTS—FULL STUDY
CUSTOMER GLOBAL

CUSTOMER GLOBAL ITEM	CFA LOADING	ITC
This customer... Is now or is expected to be a Key/National Account	1.00	.489
Is a key element in the strategic plan for this SBU or business line	.761	.489

Measures of Overall Fit	
Composite reliability	NE
Variance extracted	NE
T-Values Significant	NE
Residual values > 2	NE
Coefficient alpha	.633

Conclusions. In neither study, the pretest nor the full test, did this scale demonstrate satisfactory results. Consequently, claims of unidimensionality were not warranted and the subconstruct has not been considered for inclusion in the test of the structural model.

In hindsight, the problem with this scale might be connected with the second indicator which addresses the "National" or "Key" account classification of the supplier's customer. Some firms, and particularly smaller distributors, may not have "National Account" programs. This item would not then apply to this group and customers and might then constitute a confounding factor.

Overall Conclusions—Customer Importance

Two of the four Customer Importance subconstruct scales exhibited satisfactory unidimensionality test results, Customer Strength and Customer Capability. As noted above, a target of the structural model evaluation was to identify a single construct to represent the Customer Importance concept. Accordingly, a composite scale, made up of the indicators from the Strength and Capability subconstructs was created and tested. The results for this ten-item scale, reported in Table 4.41, were supportive of the idea. The composite and alpha reliability estimates were .894 and .893, respectively. All statistics and indexes met guidelines with the exception of the variance extracted value of 45.8%. Moreover, this scale encompasses the substantive domain of two of the three underlying concepts represented in the overall Product Importance concept. Because of these reasons, the Customer Composite scale was adopted for inclusion in the structural model evaluation.

Evidence of Discriminant Validity of Scales

To further investigate construct validity of each scales, a comparison was made for each scale of its variance extracted to the squared correlations of that scale to all other scales (see the construct/subconstruct correlation matrixes in Appendix B). Discriminant validity is further evidenced when the variance extracted for each construct or subconstruct exceeds the squared correlations of that construct or subconstruct with all other constructs or subconstructs.

TABLE 4.41
CONSTRUCT VALIDITY TESTS—FULL STUDY
CUSTOMER COMPOSITE

CUSTOMER COMPOSITE ITEM	CFA LOADING	ITC
This customer is... Is technically very	.592	.540
Is a very effective marketer	.584	.589
Has a reputation in its industry for being well managed	.727	.700
Is a major competitive force in its industry	.831	.754
Is a recognized leader in its industry	.897	.765
is one of the top three companies in its industry	.558	.341
This customer has an excellent knowledge of... Its own manufacturing process technology	.621	.544
Its own distribution system	.690	.621
Its own products and performance needs	.772	.689
Its competitors and markets	.761	.670
Its own customers' product needs	.772	.616

Measures of Overall Fit

Composite reliability	.894
Variance extracted	45.8%
T-Values Significant	10/10
Residual values > 2	2/45
Coefficient alpha	.893

Each scale passed this test of discriminant validity with the exception of those cases in which high correlations among constructs could reasonably be anticipated and explained (e.g., the correlation of Strategic Expectations to Strategic Benefits). These few cases do not, however, suggest that the scales in question lack discriminant validity because in no instances were the companion scales of this nature included in the hypothesized relationships in the SBSR model. These findings further supported claims of construct validity. Therefore tests of hypotheses using the structural model were conducted with the selected scales as noted above.

Summary of Scale Evaluation and Refinement Results

Pretest Summary

The pretest scale evaluation and refinement process resulted in several respecified scales (involving the elimination of problematic measures) along with the replacement of two scales in toto (Firm Exposure and Flexibility). Twenty-five of the original 27 scales were retained as originally conceived or with only nominal respecification for use in the full study. It was possible to estimate composite reliabilities from CFA for 20 of the 25 remaining scales. As can be noted from Table 4.42, 18 of these 20 scales had composite reliabilities of .70 or greater; the two others had reliabilities of .69 and .55. Alpha coefficient estimates for the five scales which comprised only two items each were .59, .69, .89, .89, and .91.

Of the 20 scales for which the percentage of variance extracted could be computed, 14 had levels of 50% or greater, three were in the range of 40 to 49%, and three, in the range of 35 to 39%. Only one scale (use of Working Agreements) failed to meet the guidelines for the combination of composite reliability and extracted variance. Recall, from the discussion above, that the poor results for this scale might have reflected a confounding factor (the plant level as opposed to corporate level as proposed for full test). In sum, these results suggested that the selected scales evidenced satisfactory levels of unidimensionality and internal and external consistency.

Full Study Summary

The summary of results of the scale evaluation process from the full study is presented in Table 4.43. This summary reports, for each scale, the coefficient alpha reliability, composite reliability, percent variance explained, and the decision regarding the selection or rejection of each scale for use in the SBSR structural model test. Scales for thirteen constructs and subconstructs were selected for the evaluation of the two structural models. These scales are identified in the last column in Table 4.43.

Twenty nine scales were evaluated in total. Of these, 18 exhibited composite reliability estimates of .80 or greater; 6 scales had reliability estimates in the range of .70 to .79; 2 in the range of .60 to .69; and 3 had estimates below .6 or were nonevaluable. Of the thirteen scales selected for the structural model test, 8 had composite reliabilities of .80 or greater; 3 had reliabilities of .70 to .79; and one had a reliability estimate under .70. This scale, Loss of Autonomy, had a reliability of .67 and variance extracted of 42%.

Conclusions

The results of the full study scale evaluation process indicated that the scales employed in this study demonstrated satisfactory and acceptable levels of construct validity. All scales selected for the structural model test, with two possible exceptions, met the major guidelines for accepting claims of construct validity.

The Loss of Autonomy scale had marginal levels of composite reliability estimate and percent explained variance (.67 and 42%). However, this single-construct scale had too few indicators to attempt improvement through the respecification process. The Soft Assets

TABLE 4.42
SUMMARY OF SCALE VALIDITY RESULTS—PRETEST

CONSTRUCT/ FACTOR	NUMBER OF ITEMS	COEFFICIENT ALPHA	COMPOSITE RELIABILITY	% VARIANCE EXTRACTED	GFI	AGFI	PERCENT RESID > |2|	SIGNIFICANCE OF T-VALUES
Continuity	4	.83	.82	55%	.97	.86	-0-	All Sig
Loss of Autonomy	3	.68	.70	45%	NE	NE	NE	All Sig
Exposure of Firm	3			-- NEW SCALE --				
Trust	5	.81	.83	56%	.92	.77	10%	All Sig
Benefits								
Strategic	5	.89	.89	62%	.74	.22	10%	All Sig
Logistic	5	.82	.83	51%	.88	.63	10%	All Sig
Product	2	.91	NE	NE	NE	NE	NE	NE
Overall	3	.79	.82	61%	NE	NE	NE	NE
Switching Costs								
Hard	7	.84	.89	53%	.84	.67	-0-	All Sig
Soft	6	.83	.88	52%	.96	.91	-0-	All Sig

(Continued)

CONSTRUCT/ FACTOR	NUMBER OF ITEMS	COEFFICIENT ALPHA	COMPOSITE RELIABILITY	% VARIANCE EXTRACTED	GFI	AGFI	PERCENT RESID > |2|	SIGNIFICANCE OF T-VALUES
Cooperation								
Global	3	.91	.92	79%	NE	NE	NE	All Sig
Sharing	2	.89	NE	NE	NE	NE	NE	NE
Flexibility	4			-- NEW SCALE --				
Joint	4	.69	.69	36%	.94	.07	-0-	All Sig
Harmony	3	.80	.82	62%	NE	NE	NE	All Sig
Coordination								
Formal	5	.86	.88	59%	.90	.70	-0-	All Sig
Management Involvement	4	.81	.85	59%	.99	.93	-0-	All Sig
Agreement	3	.53	.55	36%	NE	NE	NE	NE

(Continued)

CONSTRUCT/ FACTOR	NUMBER OF ITEMS	COEFFICIENT ALPHA	COMPOSITE RELIABILITY	% VARIANCE EXTRACTED	GFI	AGFI	PERCENT RESID > |2|	SIGNIFICANCE OF T-VALUES
Product Importance								
Strategic Fit	7	.87	.89	55%	.77	.55	5%	All Sig
Strategic Expectations	5	.90	.90	65%	.81	.44	-0-	All Sig
Logistics Expectations	4	.76	.77	40%	.91	.74	10%	All Sig
Product Expectations	2	.89	NE	NE	NE	NE	NE	NE
Overall	4	.67	.70	38%	.99	.95	-0-	All Sig

(Continued)

CONSTRUCT/ FACTOR	NUMBER OF ITEMS	COEFFICIENT ALPHA	COMPOSITE RELIABILITY	% VARIANCE EXTRACTED	GFI	AGFI	PERCENT RESID > |2|	SIGNIFICANCE OF T-VALUES
Customer Importance								
Customer Strength	6	.78	.80	40%	.90	.77	-0-	All sig
Customer Capability	5	.81	.84	52%	.91	.74	-0-	All Sig
Customer Potential	2	.59	NE	NE	NE	NE	NE	NE
Global	2	.69	NE	NE	NE	NE	NE	NE

Note: NE indicates not estimated because of insufficient number of items.

TABLE 4.43
SUMMARY OF FINAL SCALE RESULTS: FULL STUDY QUESTIONNAIRE

CONSTRUCT/ SUBCONSTRUCT	NUMBER OF ITEMS	COEFFICIENT ALPHA	COMPOSITE RELIABILITY	% VARIANCE EXTRACTED	STRUCTURAL MODEL SELECTION DECISION/CONCLUSIONS
Continuity	3	.80	.80	57%	Accepted
Loss of Autonomy	3	.64	.67	42%	Accepted
Exposure of Firm	3	.73	.74	51%	Accepted
Trust	4	.82	.84	59%	Accepted
Frequency	4	.72	.73	41%	Accepted
Benefits					
Strategic	4	.85	.85	59%	Not selected in lieu of Overall Objectives subconstruct
Logistic	6	.85	.86	51%	Not selected in lieu of Overall Objectives subconstruct
Product	2	.81	.87	NE	Not selected in lieu of Overall Objectives subconstruct
Overall	3	.82	.83	62%	Accepted

(Continued)

CONSTRUCT/ SUBCONSTRUCT	NUMBER OF ITEMS	COEFFICIENT ALPHA	COMPOSITE RELIABILITY	% VARIANCE EXTRACTED	STRUCTURAL MODEL SELECTION DECISION/CONCLUSIONS
Switching Costs					
Hard	7	.86	.87	49%	Accepted
Soft	6	.77	.77	38%	Additional subconstruct in SubCLS Model
Cooperation					
Global	3	.86	.88	70%	Accepted
Sharing	2	.62	.75	NE	Not selected in lieu of Global Cooperation
Flexibility	4	.84	.84	57%	Not selected in lieu of Global Cooperation
Joint	4	.81	.80	51%	Not selected in lieu of Global Cooperation
Harmony	3	.49	NE	NE	Not selected in lieu of Global Cooperation/inadequate psychometric properties
Coordination					
Formal	4	.84	.84	58%	Not selected— inadequate substantive content
Management					

(Continued)

CONSTRUCT/ SUBCONSTRUCT	NUMBER OF ITEMS	COEFFICIENT ALPHA	COMPOSITE RELIABILITY	% VARIANCE EXTRACTED	STRUCTURAL MODEL SELECTION DECISION/CONCLUSIONS
Involvement	3	.63	.73	50%	Accepted
Agreement	3	.64	.66	40%	Not selected in lieu of Management Involvement subconstruct/ inadequate psychometric properties
Product Importance					
Strategic Fit subconstruct	7	.88	.88	51%	Not selected in lieu of Strategic Objectives
Strategic Objectives	4	.82	.83	56%	Accepted
Logistics Objectives	6	.85	.85	50%	Additional subconstruct in SubCLS Model
Product Expectaions subconstruct	2	.80	.86	NE	Not selected in lieu of Strategi Objectives
Overall subconstruct	3	.69	.76	56%	Not selected in lieu of Strategic Objectives

(Continued)

CONSTRUCT/ SUBCONSTRUCT	NUMBER OF ITEMS	COEFFICIENT ALPHA	COMPOSITE RELIABILITY	% VARIANCE EXTRACTED	STRUCTURAL MODEL SELECTION DECISION/CONCLUSIONS
Customer Importance					
Customer Strength	6	.83	.86	51%	Not selected in lieu of Customer Composite subconstruct
Customer Capability	5	.80	.85	53%	Not selected in lieu of Customer Composite subconstruct
Customer Potential	2	.45	NE	NE	Not selected in lieu of Customer Composite subconstruct/inadequate psychometric properties
Global	2	.45	NE	NE	Not selected in lieu of Customer Composite subconstruct/inadequate validity results
Composite	11	.89	.89	46%	Accepted

Note: NE indicates not estimated because of insufficient number of items.

(switching costs) scale had a satisfactory reliability estimate (.77) but a somewhat low percent variance explained (38%). However, as indicated in the summary conclusions on Soft Assets, all other statistics and indexes met the guidelines. The evaluation of the structural models and results of the hypotheses tests are described in the next chapter.

CHAPTER 5

STRUCTURAL MODEL AND HYPOTHESES TEST RESULTS

Chapter 2 provided the theoretical development of the Seller-Buyer Strategic Relationship (SBSR) empirical model and research hypotheses. Chapter 3 outlined the research design involved in testing the model and hypotheses. The results of the questionnaire scale development and construct validity assessment were detailed in Chapter 4. The purpose of Chapter 5 is to examine the results of the empirical test of the hypotheses embodied in the SBSR model.

This chapter is organized as follows. The next major section provides a summary of the data collection methods employed in the full study. The sample firms and respondents are profiled and the generalizability of the sample discussed. The section following frames up the analytical approach employed in assessing the validity of the overall model and of the individual hypotheses. In the third section, the tested models of the SBSR are described and their overall LISREL analytical results summarized. The final section presents the results the analyses for the set of research hypotheses for each tested model.

Data Collection

The sample frame for the full test of the SBSR model was obtained from two different sources. First, the National Association of Wholesalers (NAW) was approached to explore their interest in participating in the study. The NAW agreed to cooperate and provided a listing of their affiliated wholesaler-distributor member associations. Research proposals were sent to twelve affiliated associations selected from the NAW listing. Four affiliates expressed an interest in participating in the study. In phone conversations with the executive directors of each of these affiliates, it was determined that three were suitable candidates for the project based on the product-market criteria specified for the study.

Recall from Chapter 3 that the sample firms were to be drawn from technically based industries involving business to business supply by either manufacturers or distributors. The selected distributor groups were the Industrial Distributors Association (IDA); the Fluid Power Distributors Association (FPDA); and the Automotive Service Industry Association (ASIA).

The second source of firms for the sample frame was obtained from the chemical industry, which also met the product-market criteria outlined above. Major firms in the chemical industry are well known to each other. Most firms are both suppliers and purchasers from a large number of other firms in the industry. Personal buyer-seller contacts are numerous and often close. These considerations suggested that by "networking," the researcher could develop a list of suitable candidate firms for the study. This proved to be the case and a group of cooperating firms was developed. These were Air Products and Chemicals, Inc.; Reynolds Chemical Co.; Amoco Chemical Co.; Waste Management, Inc.; Texaco Chemical Co.; Hoechst Celanese; Occidental Chemical Corporation; DuPont Chemical Co.; Shell Chemical Co.; Exxon Chemical Co.; Union Carbide; Monsanto Chemical Co.; and Dow Chemical Co.

The specific data collection steps differed between the two groups of cooperating firms, the distributors and the chemical companies. These steps will be described briefly next.

Data Collection Procedure—Distributors

The three participating distributor associations (IDA, FPDA, and ASIA) provided mailing lists of their member firms. In two instances (the IDA and FPDA), the associations eliminated very small member firms from the lists. A total of 611 questionnaires was mailed to distributor firms. Each mailing included a personally signed cover letter on LSU letterhead explaining the study and encouraging cooperation and a self-addressed, stamped return envelope. A follow-up post card reminder was sent to all firms two weeks from the date of the initial mailing.

Data Collection Procedure—Chemical Companies

A beginning list of possible cooperating firms (those noted above) was developed from contacts at one company, Ethyl Corporation. Names of individuals known to be involved in relationship marketing were obtained. These individuals were contacted by phone and the study described and their cooperation solicited. These initial contacts then provided names of other individuals in each of their respective companies who were involved in relationship marketing (selling or buying). A total of 131 key informant names and addresses was generated in this way.

The mailings to the chemical company respondents consisted of individually addressed cover letters, on LSU letterhead, describing the study, and stamped, self-addressed return envelopes. In some instances, prenotification by phone was used to establish contact with individuals. In other instances, individual follow-up phone calls were used encourage cooperation.

Responses from the Questionnaire Mailings

A total of 741 questionnaire was mailed and a total of 178 returned for an overall response rate of 24 percent. After the elimination of unsuitable questionnaires, the final sample consisted of 163 firms.

The response rates differed between the distributor and chemical company groups. Of the 163 usable questionnaires, 101 were returned by distributors, and 62 by chemical companies, for response rates of 16.5 percent and 47.3 percent, respectively. The response rate difference can be explained by two main factors. First, the chemical company respondents were prescreened and selected based on their firm's involvement in relationship marketing. No such prescreening was conducted for the distributor group. Not all distributor firms are involved in relationships -- perhaps only a small minority. Second, the level of individual contact was much greater with the chemical companies. The combination of individual phone call contacts and individualized letters probably served to increase respondent involvement levels in this group.

The questionnaire contained several scales addressing the demographics of the firms. As shown in Table 5.1, a broad cross section of firm size was represented in the sample. Approximately 36 percent of the reporting firms had total annual revenues of $ 1 billion or greater, about 10 percent were in the range of $ 50 million to $ 1 billion, and slightly over half had revenues under $ 50 million. The larger firms tended to be represented by the chemical industry and the smaller, by the distributors. More than 85 percent of the chemical companies had total revenues of $ 1000 MM or greater. On the distributor side approximately 80 percent had revenues of under $ 50 MM.

TABLE 5.1
CHARACTERISTICS OF SAMPLE FIRMS
SIZE OF FIRM: TOTAL REVENUES

Revenues ($ MM)	Chemical Companies		Distributors		Total Companies	
	No.	Percent	No.	Percent	No.	Percent
Less than 50	3	4.8	80	79.2	83	50.9
50 - 149	1	1.6	9	8.9	10	6.1
150 - 499	2	3.2	3	3.0	5	3.1
500 - 999	1	1.6	1	1.0	2	1.2
1000 - 4999	16	25.8	1	1.0	17	10.4
5000 or greater	37	59.7	5	5.0	42	25.8
Not Reported	2	3.2	2	2.0	4	2.5
Total	62	100.0	101	100.0	163	100.0

Predictably, the average sized firm in the sample was larger than the typical firm in these industries. (The average annual revenues of a firm in the chemical industry was $ 3.4 million in 1993; in the industrial distributor industry, $ 1.5 million (Dunn & Bradstreet, 1993)). This was to be expected since very small firms probably do not have the resources to engage in buyer-seller partnering as described in this study. In terms of total employees, approximately 43 percent of the reporting firms had fewer than 100, 18 percent had 100 to 4999, and 39 percent had 5000 or more employees, as shown in Table 5.2.

TABLE 5.2
CHARACTERISTICS OF SAMPLE FIRMS
SIZE OF FIRM: NUMBER OF EMPLOYEES

Number of Employees	Chemical Companies		Distributors		Total Companies	
	No.	Percent	No.	Percent	No.	Percent
Less than 100	1	1.6	58	57.4	59	36.2
100 - 999	2	3.2	9	8.9	11	6.7
1000 - 4999	9	14.5	5	5.0	14	8.6
5000 or more	49	79.0	5	5.0	54	33.2
Not Reported	1	1.6	24	23.8	25	15.3
Total	62	100.0	101	100.0	163	100.0

A range of different industrial product types was also represented by the sample firms. As shown in Table 5.3, raw or processed material comprised about 38 percent of the total. Of the remainder, about 23 percent were component parts, 28 percent, supplies, and the balance of approximately 10 percent was split among heavy equipment, light equipment, and services. As expected the chemical companies were primarily involved in raw or processed materials (84%) whereas the distributors were more likely to sell component parts or supplies (82%). The sample firms were about equally divided between those primarily involved in manufacturing (47.4 percent) and those primarily in distributing (52.6 percent).

TABLE 5.3
CHARACTERISTICS OF SAMPLE FIRMS
TYPES OF PRODUCTS SOLD

Types of Products	Chemical Companies No.	Chemical Companies Percent	Distributors No.	Distributors Percent	Total Companies No.	Total Companies Percent
Raw Material	39	62.9	3	3.0	42	25.8
Processed Material	13	21.0	6	5.9	19	11.7
Component Parts	0	-0-	38	37.6	38	23.3
Supplies	1	1.6	44	43.6	45	27.6
Heavy Equipment	1	1.6	3	3.0	4	2.5
Light Equipment	0	-0-	5	5.0	5	3.1
Business/ Technical Services	5	8.1	1	1.0	6	3.7
Not Reported	3	4.9	1	1.0	4	2.5
Total	62	100.0	101	100.0	163	100.0

As checks on firm and informant suitability, each questionnaire included scales on the level of organizational and individual involvement in relationship marketing. The average duration of the customer relationships reported in the survey was 6.1 years; the range was 1 year to 45 years. As shown in Table 5.4, almost half, 49 percent, of all respondents reported that the stage of their customer relationship could be characterized as "developing." 36 percent indicated that they were in the "mature" stage and 6.1 percent and 2.5 percent, reported to be in "initial" and "concluded" stages respectively.

The distributors reported a greater proportion of relationships in the "mature" stage (47%) than did the chemical companies (18%). It would appear that, on average, distributors have been involved in buyer-seller relationships longer than the average chemical company. Perhaps the fact that a portion of the distributor sample was drawn from firms supplying the automotive industry (the ASIA group) contributed to this difference. The automotive industry was among the first in this country to move toward the Japanese version of buyer-seller alliances, sometimes called "Kanban." The car companies are known to have "pulled" suppliers into these types of buyer-seller arrangements.

TABLE 5.4
CHARACTERISTICS OF SAMPLE FIRMS
STAGE OF RELATIONSHIP DEVELOPMENT

Stage of	Chemical Companies		Distributors		Total Companies	
Relationship	No.	Percent	No.	Percent	No.	Percent
Initial	2	3.2	8	7.9	10	6.1
Developing	43	69.4	36	35.6	79	48.5
Mature	11	17.7	47	46.5	58	35.6
Concluded	2	3.2	2	2.9	4	2.5
Not Reported	4	6.5	8	7.9	12	7.4
Total	62	100.0	101	100.0	163	100.0

The respondents had an average of 8.9 years experience in their current position, and 22.2 years total in business. Two job functions predominated among all respondents. As shown in Table 5.5, approximately 42 percent reported being in sales and 40 percent, in general management. Slightly more than 10 percent were in marketing and the balance (eight percent) was split among other functional categories or not reported. General management was the predominant job function among reporting distributor firms (56%), whereas the majority of chemical company respondents were drawn from the sales function (65%). This difference was not unexpected. In smaller sized companies, as represented by these distributors, the proprietor/manager often "wears many hats" including the responsibility for major accounts. In large companies major account responsibility is the province of the sales organization and often, the National Account Sales group.

TABLE 5.5
CHARACTERISTICS OF RESPONDENTS:
JOB FUNCTIONS AND RESPONSIBILITY FOR CUSTOMER RELATIONS

	Chemical Companies		Distributors		Total Companies	
A. Job Function	**No.**	**Percent**	**No.**	**Percent**	**No.**	**Percent**
Sales	40	64.5	28	27.7	68	41.7
Marketing	7	11.3	10	9.9	17	10.4
Purchasing	3	4.8	1	1.0	4	2.5
Technical Services	1	1.6	0	-0-	1	0.6
Distribution	0	-0-	0	-0-	0	0.0
R&D	0	-0-	0	-0-	0	0.0
Manufacturing	1	1.6	0	-0-	1	0.6
General Management	8	12.9	57	56.4	65	39.9
Other	2	3.2	3	3.0	5	3.1
Not Reported	0	-0-	2	2.0	2	1.2
Total	62	100.0	101	100.0	163	100.0

B. Level of Responsibility for Customer Relationships: All Companies

(1) In General	**Percent Reporting**
Primary Responsibility	45.3
	38.5
	14.9
	1.2
No Responsibility	- 0 -

(2) In Particular Relationship	**Percent Reporting**
Primary Responsibility	36.0
	33.5
	20.5
	5.0
No Responsibility	5.0

The respondents also had substantial levels of experience in relationship marketing. The length of time they had been involved in customer relationships in general averaged

16.1 years, and in the particular, referent, relationship, 6.1 years. The level OF responsibility among the respondents for relationship development was also quite high. As shown in Table 5.5, 83.5 percent reported that relationship involvement, in general, was their primary responsibility or next to primary responsibility. Moreover, 69.5 percent reported that that the referent relationship in the questionnaire was their primary or next to primary responsibility. On average, respondents spent 41.5 percent of their time working on customer relationships.

Three primary conclusions emerged from these findings. First, the types of products manufactured and/or sold by the sample firms was consistent with the product-market criteria outlined in Chapter 3. Second, the industrial firms in the study represented a broad cross section of size, industry and channel location. Consequently, the findings of the study can be regarded as generalizable. The third conclusion is that the level of the respondents' involvement and experience in relationships was quite high, and their functional location in the organization (mostly sales, marketing, and general management) well suited for possessing comprehensive knowledge on their own and their customer firm's relationship activities. Consequently, they were judged to be suitable key informants for the study. Taken together, these considerations suggested that the two sample groups met the requirements established for the sample and, therefore, that it was appropriate to pool responses from both groups for analysis purposes.

Analyzing the Structural Model

The Structural Equation Submodel Analytical Approach

The two-step structural modeling method was employed in this analysis. This method involves the separate estimation (and respecification) of the measurement model (scale unidimensionality assessment and specification) prior to the estimation of structural submodel (Anderson and Gerbing 1988). This approach enables a comprehensive, confirmatory assessment of construct validity. The scale unidimensionality tests provide confirmatory assessment of convergent and discriminant validities. Given acceptable convergent and discriminant validities, the test of the structural model then constitutes a confirmatory assessment of nomological validity (Anderson and Gerbing 1988).

The following steps, derived from the two-stage procedure described in Anderson and Gerbing (1988), were used to implement the structural submodel test. First, the composite reliability of the scale representing each construct was computed from the standardized loadings (lambda coefficients) of each indicator. Second, the structural equations incorporating the path coefficients used for investigating each hypothesis were developed and programmed in LISREL. Third, a summed scale of the indicators representing each construct was computed and the composite reliability of each scale assigned, or "valued," in the LISREL model. Fourth, the structural model path parameters (the beta and gamma coefficients) representing each hypothesis were estimated in LISREL using the correlation matrix as input. Finally, the validity of the overall model and the statistical significance of each parameter estimate were determined using the guidelines outlined in Chapter 3.

Two Variants of the Empirical SBSR Model

Recall from Chapter 2 that the SBSR Empirical Model comprises eleven constructs and fifteen hypotheses. Further, recall from Chapter 4 that these constructs have been conceptualized at two different levels. First, several of the constructs were conceptualized as solely single-factor concepts, called "constructs." Second, the balance of constructs were conceptualized as consisting of subdimensions, first-order factors, termed "subconstructs," which were theorized to originate from second-order factors (the "constructs"). The SBSR empirical model was first conceptualized at the "construct" level because existing theories and research have primarily addressed this level; i.e., theoretical support of each hypothesis was found to reside principally at the "construct" level. However, in the case of some constructs interesting insights and "richness" of the theory would have been neglected had the theory been tested exclusively at the construct level (see the discussion of this issue in Chapter 4).

Consequently, two versions of the SBSR model were specified and tested. The first consisted of eleven constructs and fifteen estimated path coefficients, representing respectively, the eleven concepts of primary interest and their associated hypotheses. This model is referred to as the Construct-Level Structural Model (CLS Model). The second model was identical to the CLS Model with one exception. Two of the constructs in this model were specified at the subconstruct level. The constructs Product Importance and Switching Costs were specified as two structural equation variables each, affording an investigation of the model's hypotheses at the subconstruct, as well as construct, level. (The rationale for selecting these concepts was explained in Chapter 4). The second model is termed the Subconstruct-Level Structural Model (SubCLS Model). The next section reviews the overall model results of these two models, followed in the final section by a review of the results of the hypotheses tests.

Overall Tests of the SBSR Structural Models

CLS Model

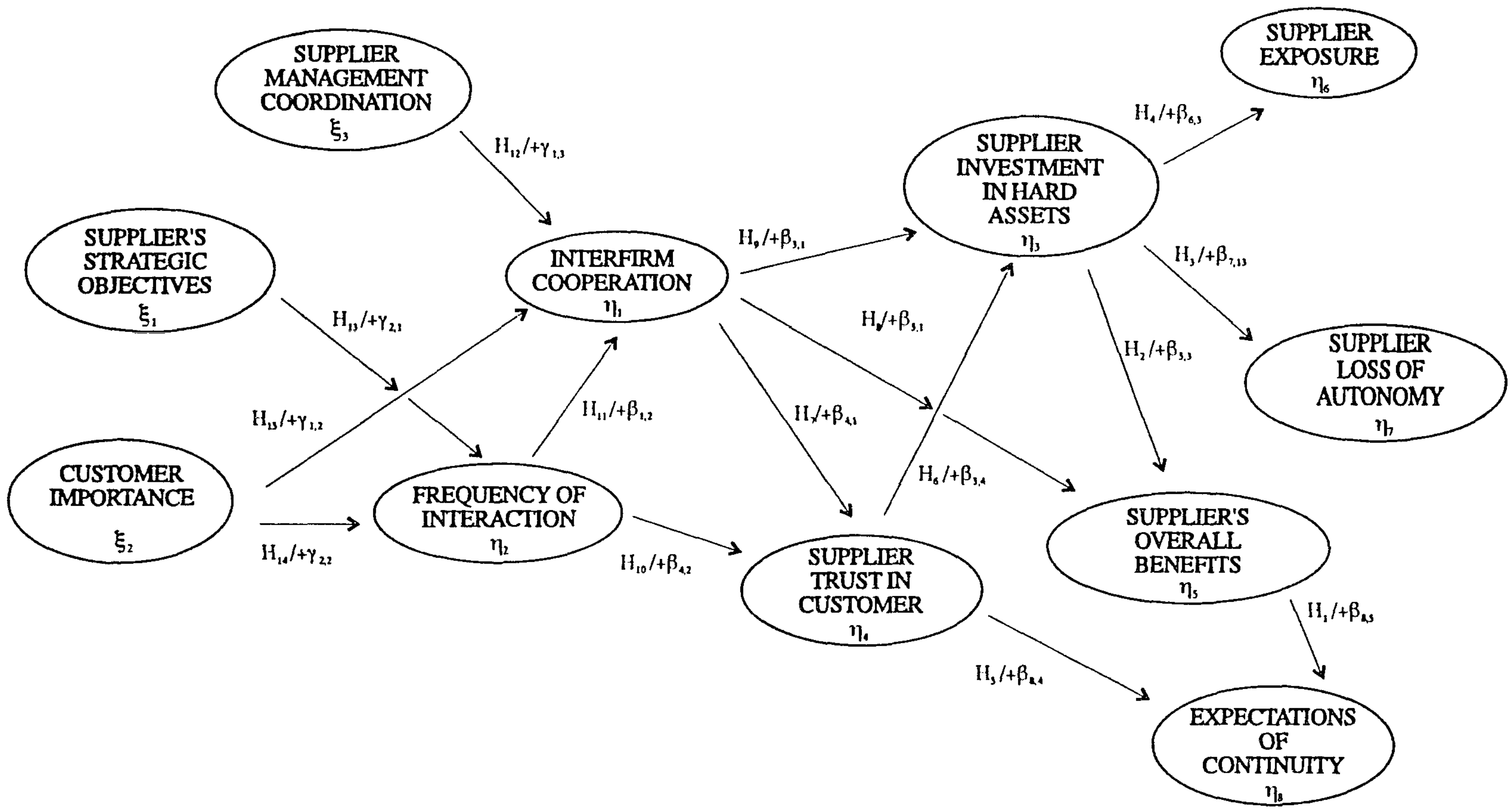
The CLS Model, portrayed in Figure 5.1, consisted of eleven constructs. The three exogenous variables represented two Situational variables (Antecedents) and one Process variable. The exogenous variables were:

Exogenous Antecedent Variables:

(1) ξ_1: Product Importance—Strategic Objectives;

(2) ξ_2: Customer Importance—Customer Strength plus

Customer Capability;



Note: (1) Hi indicates hypothesis tested
(2) βi,j or γ ij indicate path coefficient

FIGURE 5.1
STRUCTURAL MODEL OF THE SBSR
CLS MODEL

Exogenous Process Variables:

(3) ξ_3: Management Coordination.

The eight endogenous constructs represented by two process and five outcome variables of the SBSR Model. These endogenous variables were:

Endogenous Process Variables:

(1) η_1: Cooperation;

(2) η_2: Intensity—Frequency;

Endogenous Outcome Variables:

(3) η_3: Switching Costs—Hard Assets;

(4) η_4: Trust;

(5) η_5: Exposure;

(6) η_6: Loss of Autonomy;

(7) η_7: Benefits—Overall Benefits;

(8) η_8: Continuity;

The eight structural equations used to test the various SBSR research hypotheses can be stated in mathematical terms:

(1) $\eta_1 = \beta_{1,2}\eta_2 + \gamma_{1,2},\xi_2 + \gamma_{1,3}\xi_3 + \zeta_1$;

(2) $\eta_2 = \gamma_{2,1}\xi_1 + \gamma_{2,2}\xi_2 + \zeta_2$;

(3) $\eta_3 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{4,2}\eta_2 + \beta_{3,4}\eta_4 + \gamma_{1,3}\xi_3 + \gamma_{2,1}\xi_1 + \gamma_{1,2}\xi_2 + \gamma_{2,2}\xi_2 + \zeta_3$;

(4) $\eta_4 = \beta_{4,1}\eta_1 + \beta_{4,2}\eta_2 + \beta_{1,2}\eta_2 + \gamma_{2,1}\xi_1 + \gamma_{1,2}\xi_2 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \zeta_4$;

(5) $\eta_5 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{5,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{4,2}\eta_2 + \beta_{5,3}\eta_3 + \beta_{3,4}\eta_4 + \gamma_{1,3}\xi_1 + \gamma_{2,1}\xi_1 + \gamma_{1,2}\xi_2 + \gamma_{2,2}\xi_2 + \zeta_5$;

(6) $\eta_6 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{4,2}\eta_2 + \beta_{6,3}\eta_3 + \beta_{3,4}\eta_4 + \gamma_{2,1}\xi_1 + \gamma_{1,2}\xi_2 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \zeta_6$;

(7) $\eta_7 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta 1 + \beta_{4,2}\eta_2 + \beta_{1,2}\eta_2 + \beta_{7,3}\eta_3 + \beta_{3,4}\eta_4 + \gamma_{2,1}\xi 1 + \gamma_{1,2}\xi_2 +$

$\gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \zeta_7$;

(8) $\eta_8 = \beta_{1,2}\eta_1 + \beta_{5,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{4,2}\eta_2 + \beta_{3,1}\eta_3 + \beta_{5,3}\eta_3 + \beta_{3,4}\eta_4 + \beta_{8,4}\eta_4 + \beta_{8,5}\eta 5$

$+ \gamma_{2,1}\xi_1 + \gamma_{1,2}\xi_2 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \zeta_8$.

The overall results the CLS Model LISREL analysis are shown in Table 5.6.

The magnitudes of these measures indicated that the overall model fit was relatively poor. None of the indices met the standard guidelines outlined in Chapter 3 (see Table 3.1, Test Statistics and Indexes). The magnitude of the normed chi-square index (3.91) and NFI (0.84) were particularly problematic. Moreover, the overall structural equation R^2 of 0.340 indicated the model was inadequate in explaining total variance. Thus the fit was deemed inadequate for structural model hypothesis testing.

TABLE 5.6
LISREL STRUCTURAL EQUATION RESULTS: CLS MODEL

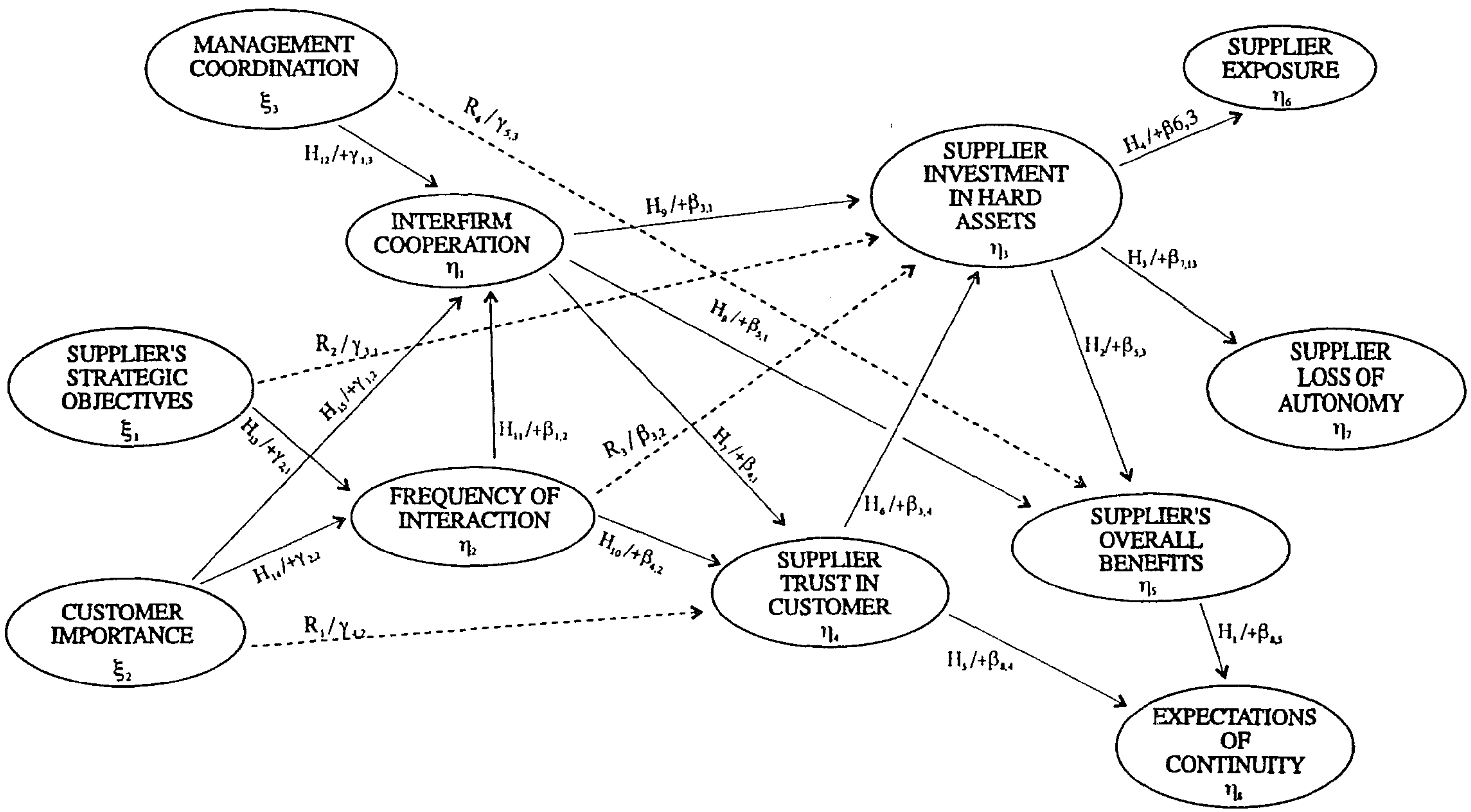
Fit Statistics and Indices	**Squared Multiple Correlations R^2 for Structural Equations**	
X^2 (37) = 144.6, p-value = 0.000	Overall Model	= 0.340
Normed Chi-square (X^2/df) = 3.91	Cooperation	= 0.313
GFI = 0.867	Frequency	= 0.124
AGFI = 0.763	Hard Assets	= 0.045
RMSR = 0.122	Trust	= 0.299
NFI = 0.84	Benefits	= 0.239
	Exposure	= 0.447
	Loss of Autonomy	= 0.246
	Continuity	= 0.520

Accordingly, it was judged that appropriate respecification of the model might prove beneficial. Model respecification is a suitable technique when the researcher incorporates substantive considerations into the respecification decision (MacCallum 1986). Respecification is acceptable when the changes make "theoretical sense" (Anderson and Narus 1990, p. 48) as well as indicate improvement in fit.

Respecified CLS Model

Examination of the LISREL results for CLS Model in combination with substantive considerations suggested the plausibility of a respecified model, called CLS Model-R (Respecified). Four paths were added to the CLS Model as shown in Figure 5.2 ($\gamma_{5,3}$, $\gamma_{3,1}$, $\gamma_{4,2}$, and $\beta_{3,2}$,). Of perhaps greatest interest is the respecification of Customer Importance as antecedent to Trust (path $\gamma_{4,2}$). The original SBSR theory posited that the supplier's level of trust in the customer was entirely determined by the buyer-seller *interaction process*. The "quantity" of the process was represented by the Frequency (intensity) of the interactions and the "quality," by the level of Cooperation. This formulation ignored the role of trust established *prior* to the engagement of the relationship. Other theorists have suggested that the *beginning* level of trust is crucial. For example Frazier et al. argue that "A reasonably high level of trust is likely to be present between the supplier and OEM before the JIT exchange is initiated" (1988, p.62). The added path relating of the level of supplier trust in the customer to Customer Importance may be regarded as representing the trust established prior to engagement of the relationship processes.

The relationship of Management Coordination to Overall Benefits (path $\gamma_{5,3}$) also warrants comment. This relationship may be an artifact of the sample, in particular the smaller distributors represented in the sample. In the case of small firms, the "manager" and the "functional participants" may likely be one in the same individual. In other words, top



Note: (1) Solid arrows indicate hypothesized paths
(2) Dashed arrows indicate respecified paths
(3) Hi indicates hypothesis tested
(4) $\beta i,j$ or γij indicate path coefficient

FIGURE 5.2
STRUCTURAL MODEL OF THE SBSR
CLS MODEL-R (Respecified)

management and the functional participants may be the same individual(s). Thus, the manager/proprietor may execute the buyer-seller functional interactions as well as "coordinate" or "manage" the relationship. Accordingly the respecified path may be regarded as supplementary to the path relating the attainment of Benefits to Cooperation ($\gamma_{5,1}$) for these firms.

The structural equations for this model are listed next. (Note: these equations are identical to those for the original model with the exception of the respecified paths which are shown in brackets):

(1) $\eta_1 = \beta_{1,2}\eta_2 + \gamma_{1,2},\xi_2 + \gamma_{1,3}\xi_3 + \zeta_1;$

(2) $\eta_2 = \gamma_{2,1}\xi_1 + \gamma_{2,2}\xi_2 + \zeta_2;$

(3) $\eta_3 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{4,2}\eta_2 + \beta_{3,4}\eta_4 + \gamma_{1,3}\xi_3 + \gamma_{2,1}\xi_1 + \gamma_{1,2}\xi_2 + \gamma_{2,2}\xi_2 + [\ \beta_{3,2}\eta_2 + \gamma_{3,1}\xi_1 + \gamma_{4,2}\xi_2\ ] + \zeta_3;$

(4) $\eta_4 = \beta_{4,1}\eta_1 + \beta_{4,2}\eta_2 + \beta_{1,2}\eta_2 + \gamma_{2,1}\xi_1 + \gamma_{1,2}\xi_2 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + [\gamma_{4,2}\xi_2] + \zeta_4;$

(5) $\eta_5 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{5,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{4,2}\eta_2 + \beta_{5,3}\eta_3 + \beta_{3,4}\eta_4 + \gamma_{1,3}\xi_1 + \gamma_{2,1}\xi_1 + \gamma_{1,2}\xi_2 + \gamma_{2,2}\xi_2 + [\ \beta_{3,2}\eta_2 + \gamma_{3,1}\xi_1 + \gamma_{4,2}\xi_2 + \gamma_{5,3}\xi_3\ ] + \zeta_5;$

(6) $\eta_6 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{4,2}\eta_2 + \beta_{6,3}\eta_3 + \beta_{3,4}\eta_4 + \gamma_{2,1}\xi_1 + \gamma_{1,2}\xi_2 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + [\ \beta_{3,2}\eta_2 + \gamma_{4,2}\xi_2 + \gamma_{1,3}\xi_3\ ] + \zeta_6;$

(7) $\eta_7 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{4,2}\eta_2 + \beta_{1,2}\eta_2 + \beta_{7,3}\eta_3 + \beta_{3,4}\eta_4 + \gamma_{2,1}\xi_1 + \gamma_{1,2}\xi_2 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + [\ \beta_{3,2}\eta_2 + \gamma_{4,2}\xi_2 + \gamma_{1,3}\xi_3\ ] + \zeta_7;$

(8) $\eta_8 = \beta_{1,2}\eta_1 + \beta_{5,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{4,2}\eta_2 + \beta_{3,1}\eta_3 + \beta_{5,3}\eta_3 + \beta_{3,4}\eta_4 + \beta_{8,4}\eta_4 + \beta_{8,5}\eta 5 + \gamma_{2,1}\xi_1 + \gamma_{1,2}\xi_2 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + [\ \beta_{3,2}\eta_2 + \gamma_{3,1}\xi_1 + \gamma_{4,2}\xi_2 + \gamma_{5,3}\xi_3\ ] + \zeta_8.$

The LISREL analysis results for the CLS Model-R are presented in Table 5.7.

TABLE 5.7
LISREL STRUCTURAL EQUATION RESULTS: CLS MODEL-R

Fit Statistics and Indices	Squared Correlations R^2 for Structural Equations	
X^2 (33) = 75.7, p-value = 0.000	Overall Model	= 0.705
Normed Chi-square (X^2/df) = 2.29	Cooperation	= 0.231
GFI = 0.920	Frequency	= 0.133
AGFI = 0.840	Hard Assets	= 0.431
RMSR = 0.077	Trust	= 0.402
NFI = 0.92	Benefits	= 0.526
	Exposure	= 0.489
	Loss of Autonomy	= 0.267
	Continuity	= 0.504

With the exception of the chi-square statistic, all measures approached or exceed guideline values. In particular, the magnitude of the chi-square, the normed chi-square (2.29) and the NFI (0.92) improved substantially over those in the initial CLS Model (3.91 and 0.84, respectively). The overall structural equation model R^2 of 0.705 was almost twice that in the initial model. Accordingly this model was judged adequate for use in the test of the study's hypotheses.

SubCLS Model-R

SubCLS Model-R is patterned after CLS Model-R. These models are specified identically with the exception of the added subconstructs and resulting paths incorporated into SubCLS Model-R. The use of the CLS Model-R configuration as the basis for SubCLS

Model-R enabled a one-to-one correspondence of hypothesis tests and comparison of results from both models.

The SubCLS Model-R, as shown in Figure 5.3, incorporated thirteen constructs and subconstructs. These were:

Exogenous Antecedent Variables:

(1) ξ_1: Product Importance—Strategic Objectives;

(2) ξ_2: Product Importance—Logistics Objectives;

(3) ξ_3: Customer Importance—Customer Strength plus Customer Capability;

Exogenous Process Variables:

(4) ξ_4: Management Coordination;

Endogenous Process Variables:

(1) η_1: Cooperation;

(2) η_2: Intensity—Frequency;

Endogenous Outcome Variables:

(3) η_3: Switching Costs—Hard Assets;

(4) η_4: Switching Costs—Soft Assets;

(5) η_5: Trust;

(6) η_6: Exposure;

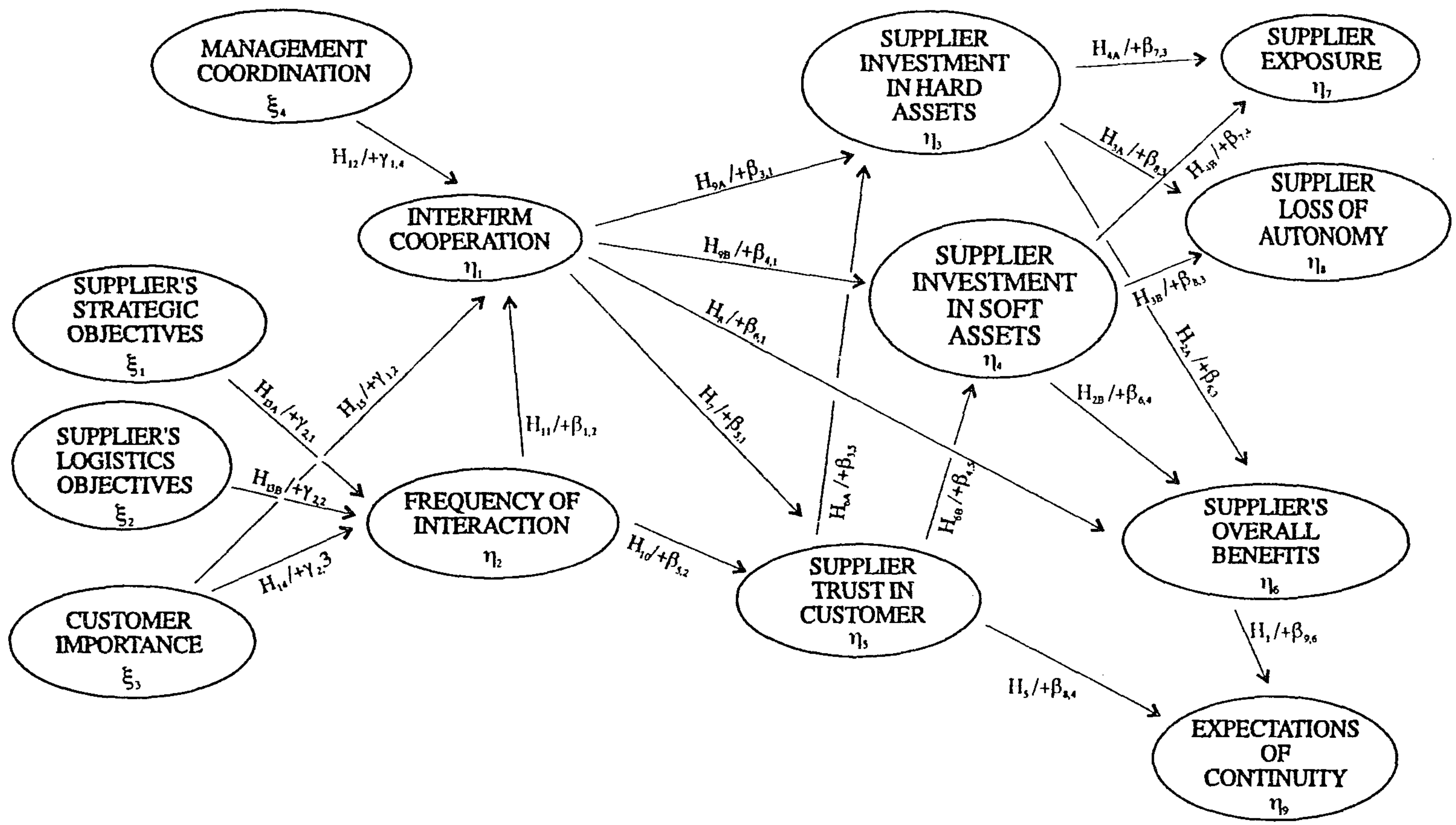
(7) η_7: Loss of Autonomy;

(8) η_8: Benefits—Overall Benefits;

(9) η_9: Continuity;

Nine structural equations were used to test the various SBSR research hypotheses (note that the respecified paths are not displayed for purposes of clarity):

(1) $\eta_1 = \beta_{1,2}\eta_2 + \gamma_{2,1}\xi_1 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \gamma_{2,3}\xi_3 + \gamma_{1,4}\xi_4 + \zeta_1$;



Note: (1) Hi indicates hypothesis tested
(2) β i,j or γ ij indicate path coefficient

FIGURE 5.3
STRUCTURAL MODEL OF THE SBSR
SubCLS MODEL-R

(2) $\eta_2 = \gamma_{2,1}\xi_1 + \gamma_{2,2}\xi_2 + \gamma_{2,3}\xi_3 + \zeta_2$;

(3) $\eta_3 = \beta_{3,1}\eta_1 + \beta_{5,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{5,2}\eta_2 + \beta_{3,5}\eta_5 + \gamma_{2,1}\xi_1 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \gamma_{2,3}\xi_3 + \gamma_{1,4}\xi_4 + \zeta_3$;

(4) $\eta_4 = \beta_{4,1}\eta_1 + \beta_{5,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{5,2}\eta_2 + \beta_{4,5}\eta_5 + \gamma_{2,1}\xi_1 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \gamma_{2,3}\xi_3 + \gamma_{1,4}\xi_4 + \zeta_4$;

(5) $\eta_5 = \beta_{1,2}\eta_2 + \beta_{5,1}\eta_1 + \beta_{5,2}\eta_2 + \gamma_{2,1}\xi_1 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \gamma_{2,3}\xi_3 + \gamma_{1,4}\xi_4 + \zeta_5$;

(6) $\eta_6 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{5,1}\eta_1 + \beta_{6,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{5,2}\eta_2 + \beta_{6,3}\eta_3 + \beta_{6,4}\eta_4 + \beta_{3,5}\eta_5 + \beta_{4,5}\eta_5 + \gamma_{2,1}\xi_1 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \gamma_{2,3}\xi_3 + \gamma_{1,4}\xi_4 + \zeta_6$;

(7) $\eta_7 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta_1 + b_{5,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{5,2}\eta_2 + \beta_{7,3}\eta_3 + \beta_{7,4}\eta_4 + \beta_{3,5}\eta_5 + \beta_{4,5}\eta_5 + \gamma_{2,1}\xi_1 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \gamma_{2,3}\xi_3 + \gamma_{1,4}\xi_4 + \zeta_7$;

(8) $\eta_8 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{5,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{5,2}\eta_2 + \beta_{8,3}\eta_3 + \beta_{8,4}\eta_4 + \beta_{3,5}\eta_5 + \beta_{4,5}\eta_5 + \gamma_{2,1}\xi_1 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \gamma_{2,3}\xi_3 + \gamma_{1,4}\xi_4 + \zeta_8$;

(9) $\eta_9 = \beta_{3,1}\eta_1 + \beta_{4,1}\eta_1 + \beta_{5,1}\eta_1 + \beta_{6,1}\eta_1 + \beta_{1,2}\eta_2 + \beta_{5,2}\eta_2 + \beta_{6,3}\eta_3 + \beta_{6,4}\eta_4 + \beta_{3,5}\eta_5 + \beta_{4,5}\eta_5 + \beta_{9,5}\eta_5 + \beta_{9,6}\eta_6 + \gamma_{2,1}\xi_1 + \gamma_{2,2}\xi_2 + \gamma_{1,3}\xi_3 + \gamma_{2,3}\xi_3 + \gamma_{1,4}\xi_4 + \zeta_9$.

The LISREL analysis results for the SubCLS Model-R are presented in Table 5.8.

Not unexpectedly, all statistics and indexes for this model were close in magnitude to those from the CLS Model-R. With the exception of the chi-square statistic, all measures approached or exceeded guidelines. The NFI value of 0.960 did evidence some improvement over that in the CLS Model-R (0.92). As a composite, these results indicated that the overall model fit was acceptable and therefore suitable for hypothesis testing purposes.

TABLE 5.8
LISREL STRUCTURAL EQUATION RESULTS: SubCLS MODEL-R

Fit Statistics and Indices	Squared Multiple Correlations R^2 for the Structural Equations	
X^2 (42) = 110.4, p-value = 0.000	Overall Model	= 0.714
Normed Chi-square (X^2/df) = 2.63	Cooperation	= 0.216
GFI = 0.909	Frequency	= 0.140
AGFI = 0.803	Hard Asset	= 0.639
RMSR = 0.078	Soft Asset	= 0.789
NFI = 0.96	Trust	= 0.398
	Benefits	= 0.519
	Exposure	= 0.550
	Loss of Autonomy	= 0.356
	Continuity	= 0.514

In summary, both respecified models, CLS Model-R and SubCLS Model-R, demonstrated satisfactory overall goodness of fit. Accordingly, these structural models were used in the tests of hypotheses described next.

Test of Hypotheses

The estimated values of the path coefficients, for the two models, CLS Model-R and SubCLS Model-R, corresponding to each research hypothesis are summarized in Table 5.9. Empirical support for each hypothesis is determined by the statistical significance of its estimated path coefficient (those with t-values larger than two in magnitude) and the appropriate direction of the relationship (Joerskog and Sorbom 1988).

TABLE 5.9
SBSR STRUCTURAL MODELS: SUMMARY OF RESULTS OF INDIVIDUAL HYPOTHESES TESTS

CLS Model-R				SubCLS Model-R				
	PATH COEFFICIENT				PATH COEFFICIENT			
HYPOTHESIS	PATH	SIZE	T-VALUE	HYPOTHESIS	PATH	SIZE	T-VALUE	RESULT[1]
H1: BENS --> CONTINU	$\beta_{9,6}$	.262	2.46[b]	H1: BENS -> CONTINU	$\beta_{9,6}$	.241	2.30[a]	GS
H2: HARD S/C --> BENS	$\beta_{5,3}$	.026	0.26	H2A: HARD S/C -> BENS	$\beta_{6,3}$	.091	0.46	NS
				H2B: SOFT S/C -> BENS	$\beta_{6,4}$	-.108	-.43	NS
H3: HARD S/C -> AUTOLOS	$\beta_{7,3}$	.522	4.08[a]	H3A: HARD S/C -> AUTOLS	$\beta_{8,3}$	.779	4.05[b]	SS
				H3B: SOFT S/C -> AUT0LS	$\beta_{8,4}$	-.364	-1.89	NS
H4: HARD S/C -> EXPOSR	$\beta_{6,3}$	.706	6.33[a]	H4A: HARD S/C -> EXPOSR	$\beta_{7,3}$	.891	5.33[b]	SS
				H4B: SOFT S/C -> EXPOSUR	$\beta_{7,4}$	-.262	-1.59	NS
H5: TRUST -> CONTINUITY	$\beta_{8,4}$	0.596	5.65[a]	H5: TRUST -> CONTINUITY	$\beta_{9,5}$	.615	5.90[b]	SS
H6: TRUST -> HARD S/C	$\beta_{3,4}$	0.240	2.01[b]	H6A: TRUST -> HARD S/C	$\beta_{3,5}$	-.080	-.380	MS
				H6B: TRUST -> SOFT S/C	$\beta_{4,5}$	0.350	2.82[b]	GS
H7: COOP -> TRUST	$\beta_{4,1}$	0.393	3.70[a]	H7: COOP -> TRUST	$\beta_{5,1}$	0.393	3.73[b]	GS
H8: COOP -> BENEFITS	$\beta_{5,1}$	0.232	2.04[b]	H8: COOP -> BENEFITS	$\beta_{6,1}$	0.302	1.57	WS
H9: COOP -> HARD S/C	$\beta_{3,1}$	-.279	-2.18[b]	H9A: COOP -> HARD S/C	$\beta_{3,1}$	-.428	-2.52[b]	NS
				H9B: COOP -> SOFT S/C	$\beta_{4,1}$	0.233	1.80	WS
H10: FRQNCY -> TRUST	$\beta_{4,2}$	0.020	0.18	H10: FREQUENCY -> TRUST	$\beta_{5,2}$	0.065	0.57	NS

(Continued)

CLS Model-R

HYPOTHESIS	PATH	PATH COEFFICIENT SIZE	T-VALUE
H11: FRQNCY -> COOP	$\beta_{1,2}$	0.229	1.94
H12: COORD -> COOP	$\gamma_{1,3}$	0.298	2.40[b]
H13: STRT OBS -> FRQNCY	$\gamma_{1,2}$	0.365	2.85[a]
H14: CUST IMPOR -> FRQ	$\gamma_{2,2}$	0.066	0.57
H15: CUST IMPOR -> COOP	$\gamma_{1,2}$	0.245	2.57[b]
RESPECIFIED PATHS			
R1: CUS IMPOR - > TRUST	$\gamma_{4,2}$	0.405	4.23
R2: STRT OB - > HARD S/C	$\gamma_{3,1}$	0.331	2.94
R3: FRQCY - > HARD S/C	$\beta_{3,2}$	0.447	3.25
R4: MGT CRD - > OVL BEN	$\gamma_{5,3}$	0.615	4.23

SubCLS Model-R

HYPOTHESIS	PATH	PATH COEFFICIENT SIZE	T-VALUE	RESULT[1]
H11: FREQUENCY -> COOP	$\beta_{1,2}$	0.202	1.73	WS
H12: COORD -> COOP	$\gamma_{1,4}$	0.299	2.44[a]	GS
H13A: STRT OB -> FRQNCY	$\gamma_{2,1}$	0.374	2.91[b]	GS
H13B: LOGS OB -> FRQNCY	$\gamma_{2,2}$	0.084	0.67	NS
H14: CUST IMPOR -> FRQ	$\gamma_{2,3}$	0.009	0.08	NS
H15: CUS IMPOR -> COOP	$\gamma_{1,2}$	0.245	2.56[a]	GS

(1) KEY:
SS: Strong Support
GS: Good Support
WS: Weak Support
MS: Mixed Support
NS: No Support

[a] Significant at p≤ .01 (1-tailed test).
[b] Significant at p≤ .05 (1-tailed test).

(2) KEY: CONSTRUCT ABBREVIATIONS
Continuity: Continu
Cooperation: Coop
Coordination: Coord
Customer Importance: Cust Impor
Frequency: Frqncy & Frq
Hard Asset Switching Costs: Hard S/C
Soft Asset Switching Costs: Soft S/C
Loss of Autonomy: Auto Loss

H1: The supplier's level of Expectations of Continuity will be positively associated with the level of its achieved or anticipated Strategic Benefits.

The beta parameter ($\beta_{9,6}$) estimates of 0.262 and 0.241, respectively for CLS Model-R and SubCLS Model-R, were significant (t-values = 2.46 and 2.30) lending convincing support for this hypothesis. Firms appear to favor a continuation of the customer relationship if they perceive economic and strategic benefits from that relationship.

H2: The level of supplier Strategic Benefits is positively associated with the level of supplier Switching Costs.

As explained in Chapter 4, the Switching Costs construct was represented by investments in Hard Assets in both models, CLS Model-R and SubCLS Model-R. In SubCLS Model-R, investment in Soft Assets was also examined.

A. ***Switching Costs Represented by Investments in Hard Assets.*** In neither model were the path coefficient estimates ($\beta_{5,3}$, $\beta_{6,3}$) significant (0.026 and 0.091, with t-values = 0.26 and 0.46).

B. ***Switching Costs in Soft Asset Investments.*** The estimated coefficient, -0.108, was not significant for this path ($\beta_{6,4}$, t-value = -0.43) in SubCLS Model-R (Hypothesis H2B).

Consequently this hypothesis was not supported for either type of Switching Cost. Strategic and economic benefits for the supplier firm do not appear to arise from Switching Cost investments in either Hard or Soft Assets.

H3: The level of Switching Costs is positively associated with the level of Loss of Autonomy.

In this hypothesis, the Switching Costs construct was represented by investments in Hard Assets in both models, CLS Model-R and SubCLS Model-R. In SubCLS Model-R, investment in Soft Assets was also examined.

A. Switching Costs Represented by Investments in Hard Assets. With a path coefficient estimates of 0.522 and 0.779, respectively for the CLS Model and SubCLS Model ($\beta_{7,3}$, $\beta_{8,3}$), this hypothesis is strongly supported (t-values = 4.08 and 4.05) for Hard Asset investments.

B. *Switching Costs in Soft Asset Investments.* The beta estimate for this path ($\beta_{8,4}$) was -0.364, with a t-value = -1.89. The hypothesis (H3B in Table 5.9) was not supported for investments in Soft Assets.

The firm's Loss of Autonomy was significantly influenced by its level of investment in Hard Asset-related Switching Costs, but not those in Soft Assets. Hard Asset investments appear to cause a perception of autonomy loss, whereas Soft Asset investments do not. Ramifications of this finding will be further explored in Chapter 6.

H4: The level of firm exposure is positively associated with the level of Switching Costs.

In this hypothesis, the Switching Costs construct was represented by investments in Hard Assets in both models, CLS Model-R and SubCLS Model-R. In SubCLS Model-R, investment in Soft Assets was also examined.

A. Switching Costs Represented by Investments in Hard Assets. This hypothesis was also strongly supported for investment in Hard Assets. The path coefficient estimates are 0.706 and 0.891, with t-values of 6.33 and 5.33, respectively ($\beta_{6,3}$, $\beta_{7,3}$).

B. Switching Costs Investments in Soft Assets. With a path coefficient ($\beta_{7,4}$) estimate of -0.262 and t-value of -1.59, this hypothesis (H4B) was not supported for Soft Asset investments.

The supplier's level of investment in Hard Asset-based Switching Costs impacted significantly on its perceived Exposure. Soft Assets had no significant impact.

H5: The level of the supplier's Expectations of Continuity is positively associated with the level of Trust in the customer.

The estimated beta coefficients ($\beta_{8,4}$, $\beta_{9,5}$) were 0.596 and 0.615, with t-values of 5.65 and 5.90, demonstrating strong support for the hypothesis. Trust had a significant bearing on the level of desired continuity in the relationship.

H6: The level of Switching Costs is positively associated with the level of supplier Trust in the customer.

In this hypothesis, the Switching Costs construct was represented by investments in Hard Assets in both models, CLS Model-R and SubCLS Model-R. In SubCLS Model-R, investment in Soft Assets was also examined.

A. Switching Costs Represented by Investments in Hard Assets. With path coefficient ($\beta_{3,4}$, $\beta_{3,5}$) estimates in the two models of 0.240 and -0.08 (t-values 2.01 and -0.38), this hypothesis received mixed support for investments in Hard Assets.

B. Switching Costs Investments in Soft Assets. The beta coefficient ($\beta_{4,5}$) of 0.350 was significant (t-value = 2.82), lending good support for the hypothesis (H6B in Table 5.9)

Overall, there was mixed support for the hypothesis that the level of supplier Trust in the customer positively impacts on the degree to which the firm invests in hard and soft asset-based Switching Costs.

H7: The level of supplier Trust in the customer is positively associated with the level of Cooperation between buyer and seller.

With beta coefficient estimates of 0.393 in both models (t-values of 3.70 and 3.73 for $\beta_{4,1}$, $\beta_{5,1}$), this hypothesis was supported favorably. High levels of Cooperation between firms significantly influences the level of supplier Trust.

H8: The level of Strategic Benefits achieved by the supplier is positively associated with the level of buyer-seller Cooperation.

This cooperation-performance linkage hypothesis received mixed support. In CLS Model, the path coefficient ($\beta_{5,1}$) estimate was .232 with a t-value of 2.04, whereas in Model-S the magnitude of the path coefficient ($\beta_{6,1}$) was higher (0.302) but was non-significant (t-value = 1.57).

H9: The level of supplier Switching Costs is positively associated with the levels of buyer-seller Cooperation.

In this hypothesis, the Switching Costs construct was represented by investments in Hard Assets in both models, CLS Model-R and SubCLS Model-R. In SubCLS Model-R, investment in Soft Assets was also examined.

A. Switching Costs Represented by Investments in Hard Assets. This hypothesis received no support for investment in Hard Assets. The beta coefficients ($\beta_{3,1}$,$\beta_{3,1}$) in both models were negative (-0.279, -0.428) and significant (-2.18, -2.52) suggesting that high levels of cooperation had a negative impact on the degree to which suppliers invest in Switching Costs represented by Hard Assets.

B. Switching Costs Investments in Soft Assets. With a path coefficient ($\beta_{4,1}$) estimate of 0.233 and t-value of 1.80, this hypothesis (H9B) received weak support. Overall this hypothesis evidenced weak, mixed support.

H10: The level of supplier Trust in the customer is positively associated with the level of Intensity of the interfirm functional interactions.

In neither model, CLS Model-R nor SubCLS Model-R, were the beta coefficient estimates ($\beta_{4,2}$, $\beta_{5,2}$) of .020 and .065, respectively, significant (t-values of .18 and .57) indicating no support for this hypothesis. The level of intensity of the relationship processes, as measured by the relative frequency of interaction, had no bearing on the level of supplier trust in the customer.

H11: The level of interfirm functional interaction Cooperation is positively associated with the level of Intensity.

With beta coefficient ($\beta_{1,2}$) estimates in the two models of .229 (t-value = 1.94) and .202 (t-value = 1.73), respectively, this hypothesis received weak support. The impact of the relative frequency of interaction on the level of interfirm cooperation was directionally correct, but displayed marginal statistical significance.

H12: The level of Cooperation of the functional group interactions is positively associated with the level of management and Coordination of these activities.

The gamma coefficient ($\gamma_{1,3}$, $\gamma_{1,4}$) estimates in the two models were .298 and .299, with t-values of 2.40 and 2.44, respectively, lending good support for this hypothesis. The degree to which top management are appropriately involved in the conduct and direction of the SBSR appeared to have a significant impact of the level of interfirm cooperation.

H13: The level of interfirm interaction Intensity is positively associated with the levels of supplier Product Importance.

As explained in Chapter 4, the Product Importance construct was represented by the Strategic Objectives of the products involved in the relationship project for both models, CLS Model-R and SubCLS Model-R. In SubCLS Model-R, Product Importance was also measured by Logistics Objectives of the project.

A. Product Importance Represented by Strategic Objectives. The path coefficient estimates ($\gamma_{1,2}$, $\gamma_{2,1}$) depicting the impact of Strategic Objectives on Intensity (relative frequency) in each model were .365 (t-value = 2.85) and .374 (t-value =

2.91). Consequently, there was strong support for this hypothesis for the concept Strategic Objectives.

B. Logistics Objectives. In SubCLS Model-R, the impact of Logistics Objectives on Intensity was also examined. The gamma coefficient ($\gamma_{2,2}$) estimate of .084, with a t-value of .67, suggested no support for the hypothesis (H13B in Table 5.9).

In summary, this hypothesis received good support when the Product Importance is represented by its Strategic Objectives, but not when represented by Logistics Objectives.

H14: The level of interfirm functional Intensity is positively associated with the level of the supplier's strategic resource Dependence on the customer.

The level of supplier dependence on the customer is indicated by the customer composite scale (customer strength and capability) as described in Chapter 3. With path coefficient ($\gamma_{2,2}$, $\gamma_{2,3}$) estimates of .066 (t-values = .57) and .009 (t-values = .08) in the two models, this hypothesis received no support. There was no apparent impact on the relatively frequency of the interfirm interactions by the level of the importance and dependence of the customer on the supplier.

H15: The level of interfirm functional Cooperation is positively associated with the level of the supplier's strategic resource Dependence on the customer.

The path coefficient ($\gamma_{1,2}$) estimates in both models were identical at a value of .245 with nearly equal t-values of 2.56 and 2.57. Therefore, this hypothesis received good support. The supplier's perception of customer importance appeared to be a determinant of the level of cooperation between firms.

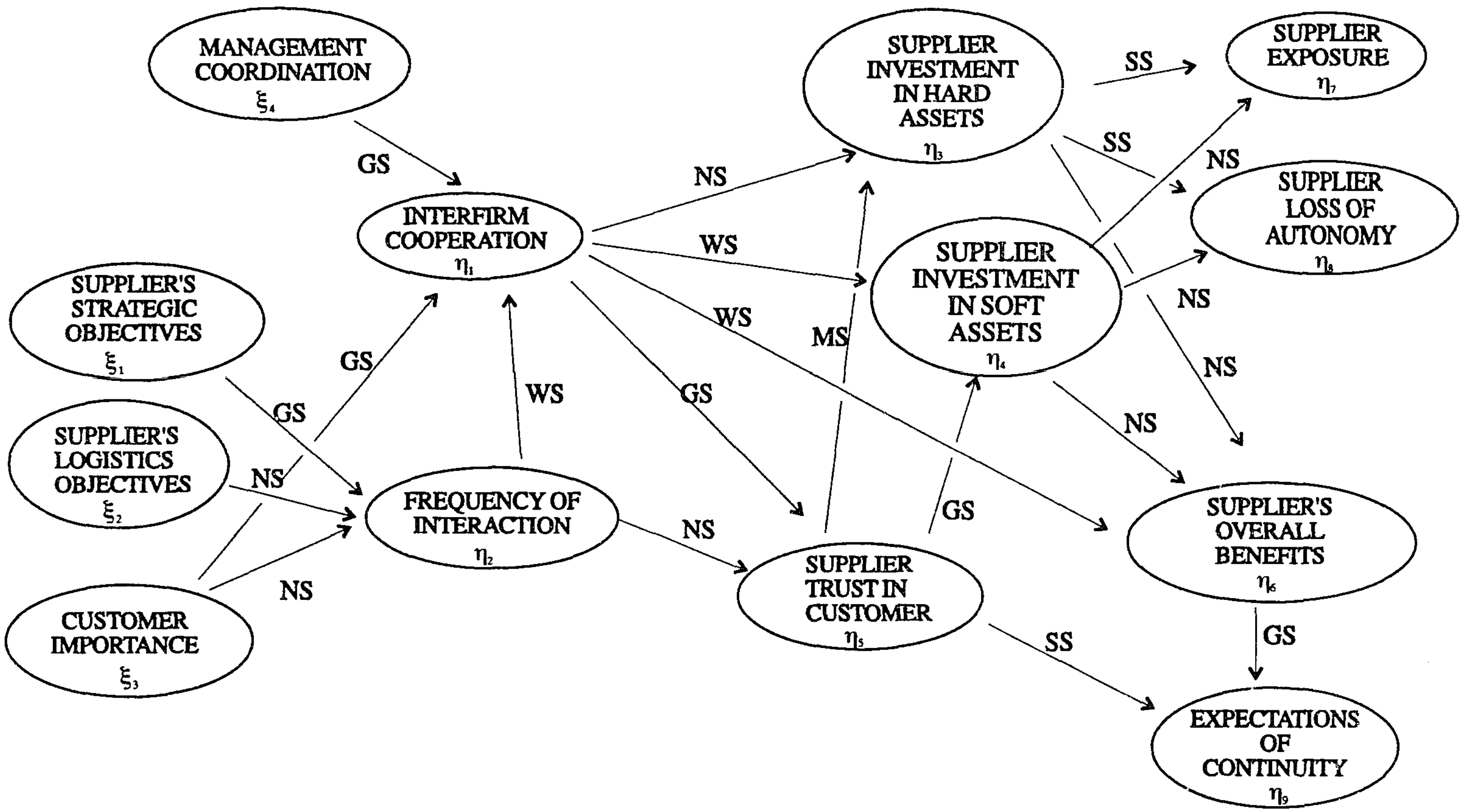
Summary of Results of Tests of Hypotheses

A total of 21 hypotheses was examined in this study of industrial buyer-seller partnerships (fifteen from the hypotheses examined in the CLS Model-R plus an additional six derived from the subconstruct-level tests performed in the SubCLS Model-R). As shown in Table 5.9, nine hypotheses received good to strong support and another four received weak or mixed support. Eight hypotheses received no support. These results are presented in the structural model portrayed in Figure 5.4. The next section provides a brief summary of these results by individual construct/subconstruct. The detailed discussion of these results and their research and managerial implications are provided in Chapter 6.

Influence of Situational Variables

Two situational variables were examined in the study: Product Importance and Customer Importance. Product Importance was investigated as two subconstructs, Strategic Objectives and Logistics Objectives. A total of four hypotheses was examined; two were supported and two not supported.

The Strategic Objectives concept was shown to have a strong impact on the intensity of the relationship interactions (relative frequency of interaction), but logistics objectives had no impact. Customer importance had a significant impact on cooperation, but not on the frequency of interactions. From these results, the explanatory role of situational variables would appear to be mixed. However, important insights on the impact of these variables on other variable were also disclosed from the paths incorporated in the respecified models. These insights will be reviewed in Chapter 6.



Note: (Refer to Table 5.9 for description of strength of support for each hypothesis.)

Key: SS: Strong Support
GS: Good Support
WS: Weak Support
MS: Mixed Support
NS: No Support

FIGURE 5.4
STRUCTURAL MODEL OF THE SBSR
SubCLS MODEL-R

Influence of Process Variables

The four Process variables included the model, Management Coordination, Cooperation, Intensity and Trust, were theorized to have a causal influence in 10 of the hypotheses. Seven of these hypotheses evidenced support at one level or another.

Coordination of the relationship was shown to have a significant impact on the level of interfirm cooperation. This variable also demonstrated, in the respecified models, a non-theorized impact on overall benefits. The discussion of this relationship is provided in Chapter 6.

Cooperation was theorized to have a causal influence on four concepts. It was shown to have a significant impact on the level of trust and benefits accruing from the relationship, a weak impact on the level of switching cost investments as measured by soft assets, but no impact on hard asset investments. In fact, the cooperation-hard asset linkage was negative and significant, the only counter-theoretic finding in the study. The implications of this finding will be explored in Chapter 6.

Trust was theorized to have a causal association with continuity and hard and soft assets. All three of these trust-related hypotheses were supported.

Influence of Outcome Variables

Outcome variables were involved as causal factors in 7 hypotheses. The switching costs and benefit variables were theorized to have a causal relationship with three other outcome variables; exposure, loss of autonomy and continuity. Switching costs was also hypothesized to have an influence on benefits. Three of the 7 hypothesized relationships evidenced support.

Overall benefits was shown to have an influence on the expectations of continuity for the relationship. Investments in hard assets was shown to have an impact on the levels of exposure and loss of autonomy, but not on the benefits of the relationship. Soft assets had no influence on any of its three linked variables: exposure, loss of autonomy, or benefits.

Summary

The overall results of this study are encouraging. Thirteen of the twenty-one proposed hypotheses received empirical support at some level. Of particular interest are the results associated with the process variables. This critical component of the model evidenced a high proportion of supported hypotheses. On the other hand, the results regarding investments in Switching Costs, were somewhat disappointing. However the respecified (nonhypothesized) paths indicated interesting possibilities for new research directions. The implications of these results for future research and management are discussed next in Chapter 6.

CHAPTER 6

DISCUSSION OF RESULTS, IMPLICATIONS AND FUTURE RESEARCH

The results of this study's hypotheses tests were presented and described in Chapter 5. The purposes of Chapter 6 are threefold. The first is to interpret the empirical findings of the study vis-a-vis the theorized hypotheses. Some hypotheses were supported and some were not. The first section provides an examination and exploration of the reasons why. The second purpose of the chapter is to discuss the research findings and their implications as they may impact on future research. The second section addresses research topics that may merit further attention. The third purpose is to provide insights for management. Study findings which might prove useful for increasing the effectiveness of industrial buyer-seller partnering are identified and guidelines offered in the final section.

Interpretation of the Findings

In Chapter 2, it was asserted that the "heart" of the SBSR model is a "complex of interactive interrelationships among three central process constructs: interfirm functional interaction *intensity, cooperation*, and *trust*." Moreover, it was suggested that the "essence" of this process is *cooperation*, "those...elements of the relationship which represent the willingness of the partners to extend exchange beyond the limits imposed by the discrete or 'arms length' approach." Furthermore, an underlying theme of this study is that the investigation of *behaviors*—either individual or firm level—affords the most fruitful approach to understanding relationships and their performance outcomes. (Recall that cooperation was conceptualized as a behavioral construct.) With this emphasis on the process component of the model in general, and cooperation in particular, it seems fitting to begin the review of the findings with those connected to the construct, cooperation.

The Role of Cooperation in the SBSR

Reflecting its central position in SBSR theory, the cooperation construct was incorporated into seven hypotheses. In three of these, cooperation was theorized to be a consequence of other causal variables, and in four hypotheses, it was theorized be a causal agent. Five of the seven hypotheses received good to strong support, another received weak support, and only one was not at all supported. Overall, the posited role of cooperation as the central element of the model was strongly supported.

A high level of cooperation was hypothesized to result from the impact of three determinant variables: *customer importance, frequency of interaction*, and *management coordination*. The path coefficient estimates for all posited relationships were statistically significant.

• ***Customer Importance and Cooperation.*** Customer importance was shown to be a significant determinant of the level of interfirm cooperation (Hypothesis 15). This finding suggests that cooperation between firms will occur when the relationship involves engagement with an "important" partner, one perceived as possessing high levels of technical, strategic and operating resources and capabilities. The theory posited that the supplier firm would be willing to act cooperatively with such as customer-partner because the partner's strengths and resources would, over time (through the functional group interfirm interactions) translate into strategic advantage for itself. A customer lacking these strengths and capabilities would not motivate engagement and cooperation in a relationship.

Customer importance was the only *situational* variable whose impact on cooperation was examined. In retrospect, the inclusion in the model of other situational variables might have proved instructive.

• ***Intensity and Cooperation.*** The theorized impact of the intensity of the relationship, represented by the frequency of interfirm interaction, on the level of cooperation (Hypothesis 11) was weakly supported. In interorganizational theory (Van de Ven, 1976), intensity is regarded as <u>the</u> defining feature of the relationship. SBSR theory posited that more numerous and more frequent interfirm interactions (i.e., a high level of intensity) would lead to higher levels of cooperation. The findings tend to support that contention.

• ***Management Coordination and Cooperation.*** The final theorized determinant of the level of cooperation was management coordination. The concept management coordination was measured in the study as particular coordinative and leadership behaviors of "top management." Based on insights drawn from the normative literature, SBSR theory posited that appropriate kinds of top management support and involvement were conducive to the conduct of the relationship, in general, and to high levels of cooperation, in particular. This postulate (Hypothesis 12) received good support. The prescription that top management "get involved" in the relationship appears to be sound advice.

Interfirm cooperation was theorized to have an <u>impact</u> on four variables: the level of supplier *trust* in the customer, the *benefits* to the supplier, and the willingness of the supplier to invest in *switching costs*, represented by both *hard* and *soft assets*. Three of the four hypothesis received empirical support. These findings will be discussed next with the exception of those regarding the influence of cooperation on the willingness of the supplier firm to invest in switching costs which will be discussed below under "Switching Costs."

• ***Cooperation and Benefits.*** High levels of cooperation in the relationship were theorized to result in the beneficial outcomes to the supplier. The process of cooperating—sharing and exchanging key strategic, technical, and operating information; planning and executing the partnership project jointly; and acting flexibly by adapting to unforseen circumstances—was postulated to be a major determinant of strategic and/or logistical benefits for the supplier. Otherwise, according to the theory, the supplier had no motive to cooperate. This hypothesis, number 8, was reasonably well supported. Benefits appear to accrue to firms who are willing to cooperate.

• ***Cooperation and Trust.*** Of perhaps greatest interest and importance is the linkage of the level of cooperation to the level of trust. Several theorists have underscored the critical role of trust to the success of the relationship. In SBSR theory, trust is one of the triad of focal process variables. The direction of causation between cooperation and trust has been the subject of debate (see for instance Dwyer et al. 1987; Anderson et al. 1987). SBSR theory argued that cooperation is causal to trust; that trust is primarily "earned." Consequently, it was theorized that high levels of trust would be associated with high levels of interfirm cooperation. This postulate (Hypothesis 7) was well supported.

The Role of Trust in the SBSR

Trust was also theorized to play a central role in SBSR theory. In addition to its hypothesized association with cooperation, trust was theorized to result from high levels of *intensity* and to be a determinant of the level of *switching cost* investments and expectations of *continuity*. The findings regarding the impact of trust on the willingness of the supplier firm to invest in switching costs are discussed below under "Switching Costs."

• ***Intensity and Trust.*** In SBSR theory, the level of supplier trust in the customer was postulated to be primarily the result of interfirm functional interactions processes. That is, trust was seen as deriving principally from the interactions among functional participants. According to the theory the more the participants in the relationship interacted and the greater the cooperative properties of that interaction, the higher the level of trust. As a result of that logic, higher levels of trust were hypothesized to be associated with higher levels of *intensity*. This postulate (Hypothesis 10), was not supported. Higher levels of relative frequency of interfirm interaction had no bearing on the level of trust according to the findings. However, as noted above, the cooperation-to-trust linkage was supported.

The respecified model, CLS Model-R, may offer insights into how trust is determined in the buyer-seller relationship. The path coefficient connecting customer importance to trust ($\gamma_{4,2}$ in Figure 5.2) was positive and significant (estimate = .405, t-value = 4.23). The level of supplier trust in the customer was significantly influenced by the importance characteristics of the customer. In retrospect, this finding is not surprising. Numerous theorists (e.g., Dwyer et al. 1987) have suggested that the engagement of an industrial buyer-seller relationship requires the existence of a threshold level of "beginning" trust—trust established in the period preceding formal engagement in the relationship. Trust will also tend to build over time in the relationship (as described above). Since a large majority of the relationships investigated in this study were reported as being in either the "Developing" or "Mature" stages, it is reasonable to conclude that there was a "beginning" level of supplier trust in the customer in addition to that resulting from the interfirm interaction processes. The (nontheorized) path representing the association of customer importance to trust may reflect that type of trust. In other words, the supplier appeared to have had established a level of trust in its customer, apart from that emerging from the functional interactions.

• ***Trust and Continuity.*** Trust was hypothesized to be a determinant of expectations of continuity. This hypothesis (Hypothesis 5) was based in large part on studies which argued that trust is crucial in creating favorable buyer-seller bonds, and to contributing to the overall success in the relationship. Thus it was reasonable to conclude that high levels of trust in the customer would be associated with the supplier's desire to see the relationship extend into the future. The hypothesis investigating this postulate was strongly supported. This causal association was one of the strongest found in the study, suggesting that the emphasis attached to trust in understanding the nature of industrial buyer-seller relationships is merited.

The Process Variable Intensity

The final process variable in the model was *intensity*, measured as the relative frequency of interfirm interaction. The role of intensity as a determinant in the model has already been discussed above (in terms of its impact on cooperation and trust). The theory also addressed the role of intensity as an effect variable of *product importance* (measured as both *strategic objectives* and *logistics objectives*) and *customer importance*. Of the three hypotheses examined, one was supported.

• ***Product Importance and Intensity.*** The degree of intensity of the relationship was hypothesized to be influenced by the level of *product importance*. Products high in "importance" were theorized to motivate engagement in a relationship, and moreover, intense levels of engagement. Product importance was represented by two subconstructs: *strategic* and *logistics objectives*. The hypotheses incorporating strategic objectives (H13 and H13A) received good support. In the other case, involving logistics objectives, the hypothesis (Hypothesis 13B) was not supported.

Recall that the strategic objectives concept reflected specific goals relating to entering new markets, obtaining new technologies and developing new products. Logistics objectives, on the other hand, addressed specific goals such as reductions in manufacturing, warehousing and distribution costs and reductions in the level of inventory and waste materials. From the findings, it would appear that strategic objectives are a strong motivator or "driver" of engagement in the relationship whereas logistics objectives are not.

The explanation for this difference in findings might lie in understanding the possible distinctions between operating a "strategic" versus "logistics" relationship. It can be surmised that the quest for new products is a continual process. The development of new products and technologies for entry into new markets is an ongoing effort requiring constant and frequent interaction among R&D, marketing, product development and other functional groups from both firms. The logistics relationship, on the other hand, once established, more or less "runs itself." When the organization and systems required for implementing the logistics relationship are in place, it should require a minimum of interfirm interaction to effectively operate.

• ***Customer Importance and Intensity***. The intensity of the interfirm interactions was also theorized to be influenced by the importance of the customer. Important customers were hypothesized to motivate engagement of the relationship in terms of frequent interfirm interactions. This hypothesis (number 14) received no support. The level of relationship engagement intensity was not influenced by the supplier's perceptions of the customer's levels of resources and capabilities. Contrast this finding with the positive results of the customer importance-cooperation linkage (Hypothesis 15) described above. An "important' customer apparently drives high levels of interfirm cooperation, but not high levels of intensity. In other words, the importance level of the customer contributes to the "quality" of the interfirm interactions, but not to their "quantity."

Perhaps the explanation for this apparent anomaly lies in better understanding the differences between cooperation and intensity in contributing to the effectiveness and success of industrial buyer-seller relationships. Cooperation is widely regarded as a crucial element of partnering. The intensity concept, on the other hand, was adopted from the literature on interorganizational relationships (Van de Ven 1976) and overlaid on the industrial marketing context. The set of hypotheses in this study concerning cooperation demonstrated reasonably high levels of support. As a group, the hypotheses involving intensity have evidenced little support (two hypotheses were not statistically supported, one was weakly supported and one, just adequately supported). These observations suggest that intensity may not be the "defining criterion" of buyer-seller relationships.

The Role of Switching Costs

SBSR theory assigned a great deal of importance to the concept of switching costs. The conceptualization of switching costs in this study departed from that incorporated into many other studies of industrial buyer-seller relationships. In these studies the concept of switching costs was patterned after Williamson's (1975) concept of idiosyncratic investment. In Williamson's formulation, idiosyncratic investments (or specific assets) are viewed as a determinant of relational interfirm processes or "governance structures." Specific assets are ascribed a somewhat *negative* connotation in this perspective. For instance, Heide and John suggest that the "presence (of specific assets) poses a *problem* for the investing party because their value depends on the good-faith behavior or forbearance by the other party" (1990 p. 27, emphasis added). Williamson suggests that such investments require "safeguards" (such as the use of "hostages" or offsetting investments) against opportunistic behaviors by the other firm.

This study's position on switching costs, based on the Jackson (1985), departs from the "Williamson" perspective. Switching costs in this study are a *result* of a relationship; they are the *outcome* of an established, cooperative, and trusting partnering process. In many cases they may be the outcomes of purposeful decisions which indicate a willingness of the firm to invest in assets that have considerably less value outside the focal relationship. And they exist for a reason: to be exploited for gain—technical, strategic, and operating benefits.

In Jackson, as well as in other prescriptive and normative studies of industrial marketing, suppliers are advised to attempt to create switching costs within the customer firm in order to secure a long-term, competitive position with that customer. While this perspective of switching costs represents a fundamental tenet of industrial marketing strategy, it has received little if any conceptual treatment or empirical investigation. The present study is an effort to redress that omission.

Switching cost investments were theorized to be the result of the degree to which *trust* and *cooperation* were established in the buyer-seller relationship and the determinant of the levels of *exposure*, *loss of autonomy*, and *benefits*. Thus, the switching costs concept was incorporated into a total of ten hypotheses (five each for hard assets and soft assets). One-half of these hypotheses received support in the empirical tests.

- ***Trust and Switching Costs.*** The linkage of trust in the customer to the supplier's willingness to invest in switching costs was examined. SBSR theory hypothesized that the greater the trust, the higher the level of switching cost investments. This proposition was favorably supported for investments in soft assets (Hypothesis 6B) and weakly supported for investments in hard assets (Hypothesis

6A). The trust-hard assets path coefficient was significant in the CLS Model-R, but not so in SubCLS Model-R. In the SubCLS Model-R, the trust-to-soft assets path coefficient estimate was large, whereas that with hard assets was quite small, approaching zero in magnitude. Perhaps the strength of the trust-hard assets relationship shown in the CLS Model-R was attenuated in the SubClS Model-R by the strength of the trust-soft assets association. In the SubCLS Model-R, the soft assets construct may have "absorbed" variance from the trust-hard assets association. This speculation is supported by the recognition that there was a significant association between soft assets and hard assets in the SubCLS Model-R (this path is not shown in Figure 5.3).

These observations suggest that the empirical evidence examining the impact of trust on switching costs is mixed. These findings preliminarily suggest that the linkage exists, but further research efforts are indicated, as discussed below.

• ***Cooperation and Switching Costs.*** The level of interfirm cooperation was also theorized to influence the supplier's degree of investment in switching costs. This hypothesis was based on the supposition that the supplier, in the course of the interfirm functional interactions, would recognize opportunities to make investments in *beneficial* switching costs, if those interactions had the qualities associated with cooperation (sharing, flexibility, etc.). If those qualities were absent (i.e., if the level of cooperation was low), important strategic and technical project planning information would not be revealed and the supplier would be unable to recognize such investment opportunities. Notice that the switching cost investments were characterized as "beneficial." This characterization is consistent with the hypotheses linking switching costs to benefit outcomes, reviewed below.

The cooperation-switching costs hypotheses received, at best, very limited support. The linkage of cooperation to investments in soft assets (Hypothesis 9B) was weakly supported. The cooperation-to-hard assets association (Hypotheses 9 and 9B) was negative and significant, and therefore, counter-theoretic.

This was the most perplexing finding of the study. Why would high levels of interfirm cooperation be antithetical to the supplier's willingness to invest in hard asset-based switching costs? A possible (partial) explanation is found in a closer examination of the respecified model, CLS Model-R. In this model there was a strong non-theorized association of the strategic objective and frequency constructs on the level of hard asset investments. The path coefficient estimates for the former ($\gamma_{3,1}$) was .331 (t-value = 2.94), and for the latter ($\beta_{3,2}$), .447 (t-value = 3.25).

The finding relating strategic objectives to switching costs is not surprising and, in fact, is consistent with the SBSR model's hypothesis that switching cost investments are causal to the beneficial outcomes of the relationship (Hypothesis 2). In other words, the firm's willingness to invest in switching costs is driven, in part, by its *expectation* that those costs will "payoff" in strategic and other benefits. The frequency-switching costs linkage is more inexplicable. The process dimensions were, indeed, theorized to be instrumental in influencing the level of switching cost investments. But this influence was theorized to be driven more from the "qualitative" characteristics of the interactions (trust and cooperation, Hypothesis 6 and Hypothesis 9) than the "quantitative" forces (intensity or frequency of interaction). The primary conclusion from this analysis is that the switching costs concept, which has received its first significant empirical examination in this study, warrants a great deal of further study. Suggested future research in this area is discussed below.

Switching costs were also theorized to be antecedent to three outcome variables; *exposure, loss of autonomy* and *benefits.*

• ***Switching Costs and Exposure and Loss of Autonomy.*** The relationships of the supplier's level of switching cost investments in hard assets to both exposure (Hypothesis 4) and loss of autonomy (Hypothesis 3) were strongly supported. On the other hand these same relationships when measured with soft assets (Hypotheses 4B and 3B, respectively) were not at all supported. In retrospect, this finding is not surprising.

Hard asset investments are relatively tangible and measurable. They are generally visible and readily recognized. For instance, a "dedicated" plant modification or customer-tailored product specification are clearly identifiable and often even quantifiable. Moreover, these investments may involve very substantial levels of financial or other resource commitments. Soft assets, on the other hand, are sometimes less recognizable and more easily "switched" from one partner to another or even abandoned altogether at a much smaller cost. For instance, an interfirm computer hookup could be changed from one customer to another with relative ease. Contrast that to a plant modification change which requires substantial levels of resource commitment (engineering and design time, retooling, and so forth). Thus, it is not surprising to find that perceptions of exposure and loss of autonomy are greater in the case of investments in hard assets than in soft assets.

• ***Switching Costs and Benefits.*** Switching cost investments were also theorized to have an influence on the level of supplier benefits. This prediction was not supported for investments in either hard assets (Hypothesis 2) or soft assets (Hypotheses 2A and 2B). This is a particularly confounding result because of the empirically demonstrated linkage of the supplier's project objectives to switching costs (a non-theorized path from the respecified model discussed above). Thus, it would appear that firms are motivated to invest in switching costs on the promise of beneficial outcomes, but in point of fact, the anticipated benefits do not derive from those investments.

Benefits

The final hypothesis tested was that linking the *overall benefits* to the supplier's expectations of *continuity* of the relationship (Hypothesis 1). This hypothesis received good support. Recall that the continuity concept was identified as the ultimate criterion variable in this study. The supplier's desire to see the relationship extend into the future (i.e., its expectations of continuity) was the study's principal measure of the relationship's success. Continuity was also shown to be strongly impacted by the supplier's level of trust in the customer as well the beneficial outcomes from the relationship. This finding suggests that both psycho-social elements (i.e., trust) and economic-strategic elements (benefits) are instrumental in successful relationships.

Beneficial outcomes were shown to be a function of the process variables, cooperation and management coordination (as discussed above). This examination of the benefits concept and its antecedents is probably too limited in scope. Future research should focus on examining the impact of additional variables on benefits.

Future Research Directions

Research in buyer-seller relationships has, to date, been predominately influenced by two major theoretic perspectives: Macneil's contractual norms and Williamson's transaction cost economics. Research in the area has tended to demonstrate support for Macneil's norms. Findings with respect to transaction cost economics have been less encouraging. Advancement of knowledge in the area will probably require shifts to new theoretic perspectives.

In this section suggestions for new research directions are offered and discussed. First, the role of interfirm cooperation is addressed. The importance of combining new conceptual foundations of cooperation with inductive research is underscored. Second, the importance of switching costs to buyer-seller relationships is examined. Conventional views of "specific assets" are reviewed and a new theoretic perspective offered. In the final section, a number of other miscellaneous new research directions are presented.

Cooperation Theory

One purpose of this study was to develop and test a theory of interfirm cooperation. The theoretical roots of the theory were drawn primarily from two sources; the literature on joint ventures (Contractor and Lorange 1988) and that on relational contracting (Macneil 1980). Insights from these theories were amalgamated and synthesized into a behavioral perspective on interfirm cooperation. Cooperation, in this conceptualization, involved interactions among functional group participants from both firms. However it was further posited, and this is the mainspring of the theory, that these interactions involve certain specific cooperative behaviors: sharing, flexibility, harmony, and joint working. These elements represented what was termed the "cooperative orientation" of the interfirm interactions. This was the "qualitative" component of interacting. The "quantitative" component was referred to as the intensity of interactions (see Van de Ven 1976).

The empirical findings of this study concerning industrial buyer seller cooperation (discussed in detail above) are tantalizing and encouraging of further efforts in the field. Two lines of future study are suggested: additional exploitation of fundamental theories of cooperation and more inductive research. These are discussed next.

• ***Fundamental Theories of Cooperation.*** Three different disciplines potentially offer insights into industrial buyer-seller cooperation: game theory, evolutionary biology and economics. Findings from the game theoretic approach

(Axelrod, 1984) have recently been incorporated into studies of interfirm cooperation in the fields of cooperative joint ventures (Contractor and Lorange 1988) and buyer-seller interactions (Heide and Miner 1992). The Prisoner's Dilemma game has been particularly useful in this regard. The Prisoner's Dilemma game suggests the conditions under which a captive chooses to "cooperate" rather than "defect." These conditions offer insight generally into the nature of cooperation.

The field of evolutionary biology (Williams 1992), the second discipline, has been influenced by the "selfish gene" theory which essentially asserts that animals, including man, act altruistically only when it brings some benefit to copies of their own genes. This happens under two circumstances: when the altruist and the beneficiary are close relatives and when the altruist is in a position to have the favor returned at a later date. This view holds that there are no cases of cooperation in the animal world except these.

In the area of economics, Mancur Olson (1966) has set forth a theory of group action which describes and explains the conditions under which cooperation within groups will occur. Olson's thesis challenges the conventional wisdom that individuals try to further their collective interest rather than their short-term individual interests Groups of individuals or even societies are seen to be the sums of their individuals, each acting in rational self-interest.

A common theme draws these perspectives on cooperation together. People and animals will cooperate only if they as individuals are given reasons to do so. In economics this means economic incentives; in biology it means the pursuit of short-term goals that were once the means to reproduction; and in game theory it means the attainment of one's freedom. In this view, cooperation is motivated by self-interest combined with reciprocation. This challenges the socio-organizational view (e.g., Cook 1977) that people cooperate for the sake of cooperation, that over time, organizations—or individuals within them—come to care about their partners and to cooperate out of altruism rather than because of exogenous requirements.

These new fundamental theories of cooperation offer the opportunity to advance knowledge in the field of industrial buyer-seller relationships. For instance, SBSR theory postulated that supplier firms are motivated to enter into partnerships because of incentives—in order to obtain strategic and economic benefits. It also suggested that they stay in the relationship for reasons of trust—a socio-organizational motivation. In this respect, SBSR theory attempted to blend insights from the new theoretic perspectives with conventional interorganizational theory. It is suggested, however, that a great deal of additional insight can emerge from a more thorough plumbing and merging of views from these fundamental perspectives.

Inductive Research on Buyer-Seller Cooperation. However, a too heavy reliance on fundamental theories risks overlooking important context-specific aspects of industrial buyer-seller cooperation. It has been shown that context can influence an individual's tendencies to cooperate (Lindskold, Getz and Walters 1986). Context may also be influential in determining the specific dimensions of cooperative behaviors. Organizational or individual behaviors that are important in one context, say industrial marketing, may not be important in another, say services marketing. Only through careful inquiry in the context of interest can differences among contexts be revealed. Ironically, the dimensions of "cooperation" that are most accepted and used today, Macneil's contracting relational norms, were inductively derived. However, their applicability to any given context has not been established.

One goal of inductive research should be the further development of a taxonomy of interfirm cooperative behaviors, as was attempted in this study (the theorized dimensions were sharing, joint working, harmony, and flexibility). A systematically derived taxonomy could then be investigated for its role in determining the effectiveness of industrial buyer-seller relationships.

Switching Costs in Industrial Relationship Marketing

An asset may be useful only or primarily in a "focal" relationship. That is, the asset has no value, or a significantly reduced value, when employed outside the association with given firm. Such assets have been termed variously as "specific assets," "idiosyncratic investments," and, in this study, "switching costs." For example, consider an industrial fabricator that produces a product with specifications specifically tailored to the demands of a given customer. Suppose further that to achieve this "specificity" of product, the fabricator designed and tooled its production facilities uniquely for this customer's needs. To produce a product with different specifications would require a substantial investment in redesign and retooling costs. The fabricator's current plant is, therefore, "idiosyncratic" to the association with this particular customer.

In this section three different aspects of research addressing switching costs research are examined. First, the theoretical underpinnings of the conventional perspective on switching costs are critiqued and an alternative perspective offered. Next, the need for additional research efforts in developing taxonomies of industrial buyer-seller switching costs is discussed. Finally, the role of switching cost investments in industrial marketing in general is addressed.

Two Perspectives on Switching Costs. Two theoretic perspectives of switching costs can be identified. The first, called here the *structuralist* perspective, derives primarily from institutional economics and in particular from Williamson's transaction cost economics theory (1975). This is currently the conventional view in the discipline. The second, labeled the *activist* perspective, is based on insights drawn from the industrial marketing literature and in particular from Jackson (1985).

These two views do not differ in their *characterization* or *description* of specific assets. The activists perspective would agree with Williamson that specific assets, "are specialized to a particular transaction...(in which) the supplier is effectively 'locked into' the transaction to a significant degree" (Williamson 1981, p. 555). Where the viewpoints differ is on *how and why such assets are developed in the first place.*

Transaction cost economic theory asserts that specific assets originate from the desire of firms to minimize their transaction costs. According to this view, the existence of specific assets "is not technically determined but instead reflects transaction-cost economizing judgments" (Williamson 1981, p. 556). This is an efficiency-based belief. Specific assets exist because firms aim to achieve an "efficient governance structure" (p. 556).

The activists perspective sees the origin of specific assets differently. According to this view, specific assets result from the desire of the firm to maximize its competitive advantage. Specific assets are seen as a means to obtain a product or cost advantage vis-a-vis competitors. As Jackson notes, "Customers will also be more willing to invest (in specific assets) if they expect high benefits from the products" (1985, p. 50). The term "activist" expresses the ability of the supplier to actively engage in sales and marketing tactics intended to "lock" the customer into that supplier. Indeed some might argue that such tactics are the cornerstone of industrial marketing sales techniques.

This difference in perspectives on switching cost development has important implications on the conduct of research in industrial relationship marketing. In its associations with customers (or suppliers), does a firm strive to minimize transaction costs or maximize competitive advantage? This is an important question that requires a great deal more research attention. The current study adopted the activists position: the level of switching cost investment was hypothesized to be related to the benefits derived from the relationship. This belief was based, in part, on the (common sense) observation that a supplier would find the cost of writing a project secrecy agreement (a transaction cost) minimal in comparison to the gain potentially available from developing a new product or enhanced logistic system (a competitive advantage).

A Taxonomy of Switching Costs. This SBSR study is one of the few that attempts to conceptualize and operationalize switching cost investments and to investigate their causal antecedents and outcomes. A two-dimensional taxonomy of switching costs was derived and assessed for construct validity. The criterion validity of this two-dimensional formulation was evaluated by investigating its relationship with certain determinant variables (cooperation and trust) and outcome variables (exposure, loss of autonomy and benefits).

The results of this investigation could perhaps be characterized as encouraging but preliminary. More corroborative and conceptual efforts are required. Is the two-dimension taxonomy of specific assets (hard and soft) identified in this study accurate? The two-factor finding is consistent with Spekman and Strauss's characterization of specific assets as either "*durable* assets (e.g. production facilities, tooling costs) or *human* assets (expert knowledge)" (1986, p. 118, emphasis added). On the other hand Jackson (1985) presents a three-factor typology (lasting assets, people and procedures), as does Williamson (1981) (site asset specificity, physical asset specificity and human asset specificity). Clearly more work is required here. New directions should include the survey of other disciplines for conceptual insights on this subject (e.g., theories concerning barriers to entry and exit in economics).

The importance of switching costs to the success of the buyer-seller relationship is another important topic that needs further inquiry. The results of this study suggest that switching costs do play a role in the industrial buyer-seller relationship, but that role is not totally clear. Hard assets and soft assets appear to behave differently in the model. For instance, hard assets demonstrated strong relationships with both exposure and loss of autonomy, whereas soft assets did not. Neither hard nor soft assets was significantly related to the derived benefits of the relationship. The findings regarding the impact of trust and cooperation on hard and soft assets was also mixed. Future research should focus on better understanding the switching costs-benefits linkage and the relationship of switching costs with other determinants and outcome dimensions.

Switching Costs and Industrial Marketing Research. The role of switching costs in a broader sense in industrial marketing is probably not well understood either. Switching costs may be an important aspect of "traditional" buyer-seller associations. For instance, anecdotal evidence suggests that a supplier attempts to build friendships or *interpersonal*-level switching costs to "lock" the customer with the supplier. The use of personal favors such as fishing trips and Christmas gifts illustrate the point.

This study focused on switching costs at the *organizational* level (e.g., physical asset specificity). Is this distinction between interpersonal-level and organizational-level switching costs meaningful and valid? Is there a continuum of switching cost investments? How would such a continuum be dimensionalized?

Finally, do switching costs play a role in conventional as well as relational industrial marketing exchange as suggested? These are all important questions which point to new research directions in the field.

Other Research Needs

It has become almost obligatory in discussion sections of studies on relationship marketing to recommend more research using dyadic and longitudinal approaches. This study's recommendation does not depart from that convention. Dyadic research would enable the investigation of the relationship's interactions simultaneously from both sides. Longitudinal methods would offer the opportunity to examine the nature of relationships across stages. The ideal empirical study would probably be one in which 150 matched industrial buyer-seller dyads were tracked and measured over a seven- or eight-year period. Practical methodological considerations suggest this is highly unlikely to take place.

An alternative approach would be to use "small sample," qualitative, research methods. It would not be unreasonable to track a small group of buyer-seller dyads (say ten) over a five-year period. The dyads should be selected at an early stage of development in order examine the dynamics of relationship growth. Small sample research would also allow an examination of specific interfirm behaviors providing the "richness" often disregarded in large sample empirical studies. Moreover, the findings from such studies should be used to guide conventional large sample research. This would serve not only to enhance the value of quantitative studies but also to empirically validate the more subjective-based findings from the qualitative approach.

The final suggestion for new research concerns development of a typology of industrial buyer-seller relationships. This study represents a preliminary effort in that direction. The impact of two types of products were identified and tested: those connected with strategic objectives and those with logistics objectives. The findings suggested that strategic-based products are more influential "drivers" of relationship processes than are those that are logistics-based. This tentatively suggests that differences between product types could be used a basis for developing taxonomies of industrial buyer-seller relationships. In this case two such types would be suggested: "strategic" alliance and "logistics" alliance.

Making such distinctions could prove useful from both the research and practical points of view. Research efforts, to date, have not addressed possible differences in partnership types. The importance of dimensions might differ from one type to another. For instance, the findings from this study suggest that "strategic" alliances require a greater degree of buyer-seller functional interactions than do "logistics" alliances. Research based on "generic" relationship models might fail to identify results, which if investigated at the level of different types of alliances, would be revealed.

Managerial Implications

This study attempted to further understanding of the nature of industrial buyer-seller partnerships. In an effort to reflect the complexities of real world relationship building and nurturing, the study's model was formulated as a fusion of strategic and organizational behavior elements. The model's construct were defined at a level of specificity surmised to be of interest to practitioners in the field. In this way it was hoped that the findings would be useful for informing practitioners as well for advancing theory development. A number of such findings were revealed and will be discussed next.

• ***Industrial marketing managers should select their relationship customers and products carefully.*** Not all customers and not all product are appropriate candidates for a relationship. Relationship development places special demands on the firm. Customers and products should meet certain minimum criteria in order to justify their inclusion in a partnership.

The results of this study indicate that customers who possess certain market, technical and operating strengths and capabilities are more likely to enhance levels of trust and cooperation in the relationship. This suggests that potential partnership customers should be screened on a number of criteria, including especially their competitive strengths and capabilities across a range of technical, operating, marketing dimensions.

Two different classes of products were investigated in this study; those which emphasized primarily strategic objectives and those which emphasized primarily logistics objectives. A tentative conclusion drawn from the findings is that products with a strong strategic focus seem to be more influential "drivers" of relationship engagement than those with the logistics focus. This does not imply that logistics-related products or projects should not be undertaken. It does suggest that products with a high level of strategic importance may be more appropriate for the demands of relationship development. Put another way, perhaps more caution is required when selecting logistics-related products as the basis for forming an industrial buyer-seller relationship.

• ***Be willing to accept risks and costs as part of being in a relationship.*** The study results demonstrated a strong linkage between the degree to which suppliers invest in hard assets switching costs and their perceived levels of exposure and loss of autonomy. Exposure and loss of autonomy are, respectively, psychic and strategic costs sometimes ignored in considering the benefits and costs of relationships.

Marketing managers should enter into the relationships "with their eyes open." They should recognize that by becoming "locked into" a given customer, they are potentially placing substantial levels of resources (hard assets switching costs) at risk. The capital and other switching cost investments may not be retrievable, in full or in part, if the relationship fails. Moreover, managers should understand that by becoming locked into a given customer, they are potentially relinquishing business opportunities otherwise available from customers who are competitors of the partner-customer.

• ***Be prepared to adopt new attitudes.*** The results of the study indicated that trust and cooperation are truly important to achieving favorable outcomes in the relationship. These concepts—trust and cooperation—may not be fully understood by many operating managers. Some managers may unable shed the old attitudes reflecting the "adversarial" way of doing business. These attitudes include "looking out for number one" and "playing it close to the vest." The study's findings suggest that firms in relationships *really* do cooperate and trust each other, and that a firm which cannot embrace these attitudes should avoid attempting a partnership.

• ***Manage the relationship.*** The study's findings corroborated the prescriptions to manage and coordinate the relationship. The study confirmed that top management involvement, monitoring and directing of the relationship functional groups, can translate into higher levels of interfirm cooperation.

Finally, the study's findings are mixed concerning the managerial implications of investing in switching costs. It was theorized that the willingness of the firm to undertake investments of this nature would pay off in competitive advantage -- in terms of strategic, operating, and technical benefits. No empirical evidence emerged to support this contention.

However, investment in hard assets were shown to be a function of the supplier's strategic objectives (a nontheorized path). The implication of these findings is ambiguous: it would appear that a firm should be willing to invest in switching costs if it believes strongly in the its partnership project objectives but that those costs do not translate into the desired overall benefits in terms of profits and revenues. As noted above, this is an aspect of partnership development that clearly requires additional research effort.

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APPENDIX A: SURVEY INSTRUMENT

INDUSTRIAL BUYER-SELLER STRATEGIC RELATIONSHIP SURVEY

Please read the following brief description before proceeding to the next page.

Relationships between industrial suppliers and their customers can be categorized into one of three types according to the importance, complexity and closeness of the association:

(1) **"Arms-length."**
The simplest and most distant. Typically involves only sales and purchasing personnel meeting periodically to negotiate supply terms (particularly price) for short-term requirements. The association is sometimes "adversarial."

(2) **The National or Key Account.**
Closer and more complex. Typically involves supply to a large customer often with a long-term supply agreement. The supplier may provide high levels of product technical services and other support. Personal contacts are important; some close individual relationships may exist among key personnel from each firm.

(3) **The Strategic Relationship.**
Also known as the "Partnership" or "Alliance," this type is the closest and most complex. The firms work closely together for <u>mutual gain</u> (the "Win-Win" philosophy). Typically involves <u>joint development</u> projects directed toward longer-term goals, such as the development of new or higher quality products or a JIT system. The firms <u>cooperate</u> closely and may share key technical and operating information, requiring a relatively high level of <u>mutual trust</u>.

KEY TERMS USED IN THE QUESTIONNAIRE

- Strategic Relationship: The close, cooperative association between seller and buyer.

- Relationship Project: The joint planning, development, and implementation activities between the *Strategic Relationship* partners. The *Project* may involve a one-time purpose (e.g., development of a new product) or may be ongoing (e.g., continual reductions in the customer's Total Procurement Costs).

- The Project Team: Functional personnel (R&D, distribution, logistics, marketing, sales, purchasing, and so forth) from <u>both partners</u> who work together on an ongoing and frequent basis to implement the *Relationship Project*. The *Project Team* may be formally organized or it may be more or less informal.

SECTION I
FEATURES OF THE STRATEGIC RELATIONSHIP

Please consider the association between your firm and a *specific customer* that most closely matches the description of the *Strategic Relationship* outlined on the previous page. If you have been involved in more than one such relationship, please choose the one which you feel is or was the strongest or most intense.

Please indicate the stage of development of your Strategic Relationship...
Initial ☐ Developing ☐ Mature ☐ This relationship is concluded ☐

How long has the Relationship lasted/did it last: _____ years.

Part A: Your Relationship Customer

This first group of questions relates to some characteristics of the *specific customer* that you have chosen above. Please indicate the extent to which the following statements apply to this customer compared to other customers that you have.

This customer...

	Not At All 1	2	3	4	Very Much 5
Is technically very capable	☐	☐	☐	☐	☐
Is a very effective marketer	☐	☐	☐	☐	☐
Has a reputation in its industry for being well managed	☐	☐	☐	☐	☐
Is a major competitive force in its industry	☐	☐	☐	☐	☐
Is a recognized leader in its industry	☐	☐	☐	☐	☐
Currently or potentially purchases a large percentage of our output of this product	☐	☐	☐	☐	☐
Currently or potentially purchases a significant quantity of other products which we supply	☐	☐	☐	☐	☐

Is one of the top three companies in its industry................................ Yes ☐ No ☐

Is now or is expected to be a Key/National Account.......................... Yes ☐ No ☐

Is a key element in the strategic plan for this SBU or business line....... Yes ☐ No ☐

This customer has demonstrated an excellent knowledge of...

	Not At All 1	2	3	4	Very Much 5
Its own manufacturing process technology	☐	☐	☐	☐	☐
Its own distribution system	☐	☐	☐	☐	☐
Its own products and their performance needs	☐	☐	☐	☐	☐
Its competitors and markets	☐	☐	☐	☐	☐
Its own customers' product needs	☐	☐	☐	☐	☐

Part B: Your Product

This group of questions relates to the product or product line supplied to (or anticipated to be supplied to) your Strategic Relationship customer. These questions address the "strategic fit" of this product in your firm or SBU compared to your other products. Please indicate the extent to which this product "fits" according to each of the following statements.

Compared to our other products, this product fits into my firm's (or SBU's)...

	Poorly 1	2	3	4	Very Well 5
Strategic portfolio of products	☐	☐	☐	☐	☐
Long-term, strategic plans	☐	☐	☐	☐	☐
Core technology	☐	☐	☐	☐	☐
Raw material base	☐	☐	☐	☐	☐
Customer base	☐	☐	☐	☐	☐
Distribution system	☐	☐	☐	☐	☐
Manufacturing process	☐	☐	☐	☐	☐

Part C: Level of Relationship Effort

This set of questions concerns the interfirm Project Team and the level of interaction between individuals and functional groups from both sides. The questions require that you respond to the level of activity of other individuals or groups in your firm and with the customer. In these instances, make your best estimate of the actions of these other parties.

Please indicate the extent to which these statements apply...

	To No Extent 1	2	3	4	To A Great Extent 5
We interact constantly with the customer	☐	☐	☐	☐	☐
Compared to other accounts, we meet with this customer more frequently	☐	☐	☐	☐	☐
Our project team members interact with this customer more often than they do with other customers	☐	☐	☐	☐	☐
The firms' Project Teams meet frequently	☐	☐	☐	☐	☐

Please indicate the particular functional groups from your firm and from the customer involved in the Relationship Project by checking off all those applicable below:

Functional Group Involved	Your Firm	Customer
R&D	☐	☐
Manufacturing Operations	☐	☐
Product Design/Engineering	☐	☐
Logistics/Distribution	☐	☐
Marketing	☐	☐
Sales	☐	☐
Purchasing	☐	☐
Finance	☐	☐

Part D: Your Relationship Project Objectives

This set of questions focuses on the objectives your firm has established as part of the Relationship Project. These objectives relate to the operating, strategic and technical goals that you may have established in the context of the Relationship Project. You are asked to address these objectives from two different time frames: (1) the early phase of the project when the objectives were initially planned and (2) the actual accomplishment or achievement of these goals.

Initially Planned Objectives
At the outset of the Relationship Project you probably had a set of objectives for the Relationship. Please think back to the beginning of the Relationship and rate the following objectives according to the degree to which each is (or was) judged to be critical to your firm's or SBU's success. To what extent are/were each of the following objectives considered to be critical to the success of your firm or SBU?

Achieved Objectives
This group of questions pertains to the objectives of the Relationship which you have actually accomplished or anticipate to accomplish as a result of the Relationship. To what extent have each of these objectives actually been achieved or are likely to be achieved?

Project Objectives...	Initially Planned Objectives: 1 (Not at All Critical)	2	3	4	5 (Very Critical)	Achieved Objectives: 1 (Not Achieved)	2	3	4	5 (Definitely Achieved)
Enter a market segment or niche previously not supplied......	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Enter a new market for our firm (or SBU)...........................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Obtain a window on a new or developing market...............	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Obtain a window on a new technology............................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Develop a product new to our firm..................................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Improve the quality of an existing product.........................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Improve the performance of an existing product................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Substantially increase our market share............................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Increase our volume and revenues with this customer..........	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Substantially increase our total profit...............................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Reduce our manufacturing costs......................................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Reduce our warehousing costs..	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Reduce our distribution/transportation costs......................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Reduce the level of inventory needed to supply the customer..	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Reduce waste materials...	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Reduce our total delivered cost to the customer.................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Part E: Interfirm Project Team

This set of questions concerns the interfirm Project Team and how the functional participants from both companies work together. Consider the Project Team to comprise two groups: (1) a group composed of your firm's functional participants and (2) a group composed of the customer's functional participants. To what extent do the following statements apply to...

	...My Firm's Group					...The Customer's Group				
	Not At All				Very Much So	Not At All				Very Much So
	1	2	3	4	5	1	2	3	4	5
Willingly provides important strategic, technical, and operating information if needed for the project's success...	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Willingly provides proprietary information............................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Is flexible in response to requests from this customer/my firm..	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Adjusts to meet unforseen needs that might occur..............	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Readily accommodates to the customer's/my firm's needs when things outside our control change..........................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Handles change well...	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Cooperates...	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Collaborates...	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Tries to work together in a spirit of "teamwork"..................	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

The two groups together...

	Not At All				Very Much So
	1	2	3	4	5
Make all important project technical and operating decisions together..	☐	☐	☐	☐	☐
Jointly decide on the goals and objectives of the project......	☐	☐	☐	☐	☐
Mutually agree before making major strategic, technical, or operating decisions for the project.............................	☐	☐	☐	☐	☐
Solve the project's technical and operating problems as a joint effort...	☐	☐	☐	☐	☐
Resolve conflicts amicably...	☐	☐	☐	☐	☐
Handle project-related problems or differences congenially....	☐	☐	☐	☐	☐
Frequently call on top management for intervention to resolve problems or differences....................................	☐	☐	☐	☐	☐

Part F: Coordination of the Relationship

This group of questions addresses methods your firm may use to coordinate and facilitate (i.e., "manage") the Interfirm Relationship Project. These coordination methods may be...

- ***internal* to your firm; directed toward your own participants or**
- ***external* to your firm; directed toward both companies.**

Please indicate which of the following coordination methods have been employed in your Strategic Relationship by checking the applicable answer.

Internal Coordination

My firm...

	Yes	No
Has organized a formal team to coordinate the activities of our functional participants	☐	☐
Has simply put together an informal team to coordinate the activities of our functional participants	☐	☐
Has specified a "coordinator" who is in charge of our internal team	☐	☐
Has at least one top manager (at the GM, or higher, level) who monitors the Project's activities, direction and performance	☐	☐

External Coordination

The customer and my firm together...

	Yes	No
Have a formal joint-company team to organize interactions between firms	☐	☐
Have an informal joint-company team to organize interactions between firms	☐	☐
Have a formal working agreement (in writing) which specifies the project's goals	☐	☐
Have a formal working agreement (in writing) which specifies that proprietary information provided by either partner will be kept secret	☐	☐
Have a formal working agreement (in writing) which specifies how the project is to be governed in the event of disagreement	☐	☐

To what extent are the following statements applicable to your Strategic Relationship?

	1 (Not at All)	2	3	4	5 (Very Much So)
My firm's top management are very supportive of our Relationship Project with the customer	☐	☐	☐	☐	☐
Managers from both sides (my firm and the customer) discuss our Relationship Project	☐	☐	☐	☐	☐
Top managers from my firm know top managers of the customer very well	☐	☐	☐	☐	☐

Part G: Investments in the Relationship

This set of questions concerns investments in physical assets (plant or distribution equipment), operating procedures, or people that your firm may have made (or is likely to make) in connection with your Strategic Relationship with this customer. These investments are useful, for the most part, only in working with this particular customer; they are specific to this customer. Listed below are a series of statements that describe different types of such investments. Please indicate the extent to which each statement applies.

	Not at All 1	2	3	4	Very Much So 5
We have established special communications channels (phone,computer, etc.) to streamline our working with this customer	☐	☐	☐	☐	☐
Because of the close working relationships we have with this customer, it would be difficult to switch to another customer	☐	☐	☐	☐	☐
Personnel from our firm have become accustomed to working with this customer	☐	☐	☐	☐	☐
We are in a position to acquire sensitive information about this customer	☐	☐	☐	☐	☐
We have an extensive working relationship with this customer	☐	☐	☐	☐	☐
Others in my organization have spent a lot of time working with this customer	☐	☐	☐	☐	☐
Our plant and/or distribution people have developed close working relationships with the customer	☐	☐	☐	☐	☐
We have significant investment in shipping and distribution equipment tailored to supplying this customer	☐	☐	☐	☐	☐
We have significantly adapted our product to the performance needs or specifications of this customer	☐	☐	☐	☐	☐
We have a full or partial requirements product supply agreement with this customer	☐	☐	☐	☐	☐
We have based our product's specifications on this customer's specific application needs	☐	☐	☐	☐	☐
We have a plant that produces product tailored to the specific performance needs of this customer	☐	☐	☐	☐	☐
We have significant investment in production facilities (plant) dedicated to supplying this particular customer	☐	☐	☐	☐	☐
We have contractually dedicated a portion of our plant to producing product only for this customer	☐	☐	☐	☐	☐

Part H: Your Individual Feelings about the Relationship

This last group of questions touches on your personal opinion or feelings about certain aspects of the Strategic Relationship with this customer. There are no right or wrong answers -- simply indicate your level of agreement or disagreement with the following statements.

	Strongly Disagree 1	2	3	4	Strongly Agree 5
My firm has a lot at stake in this relationship	☐	☐	☐	☐	☐
My firm has placed a substantial amount of capital at risk (e.g., in distribution, plant, or other equipment) by dealing with this single customer	☐	☐	☐	☐	☐
Because of our close alliance with this single customer we are assuming more risk than normal	☐	☐	☐	☐	☐
The outcome of this project is somewhat uncertain	☐	☐	☐	☐	☐
Because of our close association with the customer, it will be harder, in the future, to work with their competitors	☐	☐	☐	☐	☐
We have lost opportunities to work with other customers because of our relationship with this customer	☐	☐	☐	☐	☐
My firm is constrained from freely selling in the marketplace because of our obligations and commitment to this customer	☐	☐	☐	☐	☐
The relationship we have with this customer is essentially "evergreen"	☐	☐	☐	☐	☐
The parties expect this relationship to last a long time	☐	☐	☐	☐	☐
My firm expects this relationship to last at least five years	☐	☐	☐	☐	☐
My firm will probably be supplying this customer for several years	☐	☐	☐	☐	☐
This customer relationship is/will be profitable for my firm	☐	☐	☐	☐	☐
Overall, I am quite satisfied with this customer relationship	☐	☐	☐	☐	☐
Overall, I feel that this customer relationship has been a success	☐	☐	☐	☐	☐
This Customer...					
Can be relied upon to keep its promises	☐	☐	☐	☐	☐
Is trustworthy	☐	☐	☐	☐	☐
Can be relied on for its technical ability	☐	☐	☐	☐	☐
Appears to sometimes withhold useful information that would benefit us	☐	☐	☐	☐	☐
Must be constantly monitored and double-checked on the information which they provide	☐	☐	☐	☐	☐

SECTION II: ORGANIZATIONAL BACKGROUND INFORMATION

Thank you for answering the questions in the SECTION I. SECTION II is brief -- a few questions about your firm and individual background and experience. (Please Note: Your answers are confidential and will only be used in combination with those of other respondents to develop a composite profile.)

Firm's Annual Revenues (in $ Million)
☐ Less than 50 ☐ 500 - 999
☐ 50 - 149 ☐ 1000 - 4999
☐ 150 - 499 ☐ 5000 or more

Number of Employees
☐ Less than 100
☐ 100 - 999
☐ 1000 - 4999
☐ 5000 or more

Which of the following best describes your firm's (or SBU's) type of product:
☐ Raw Material ☐ Heavy Equipment
☐ Processed Material ☐ Light Equipment
☐ Component Parts ☐ Business/Technical Services
☐ Supplies (MRO)

Is your firm primarily a... ☐ Manufacturer, or a... ☐ Distributor

What is your firm's (or SBU's) Industry: ______________________________

What is your job function:
☐ Sales ☐ Customer Tech Service ☐ Manufacturing
☐ Marketing ☐ Distribution/Logistics ☐ General Management
☐ Purchasing ☐ R&D/Technical ☐ Other

Length of Time in...
Present Position: ________ Years. Industry/Business: _________ Years.

Length of time you have been involved in...
- working in customer relationships in general: _____Years
- the particular customer relationship used as your example in the questionnaire: _____Years

What level of responsibility, in general, do you have for customer relations?
No Responsibility Primary Responsibility
☐ ☐ ☐ ☐ ☐

What level of responsibility do you have for this particular customer relationship?
No Responsibility Primary Responsibility
☐ ☐ ☐ ☐ ☐

Approximate percentage of time devoted to customer relations: _____%

THANK YOU FOR YOUR HELP! Please return this in the postage paid envelope (even if you have not answered all questions) **PLEASE RETURN TODAY!**

INDUSTRIAL BUYER-SELLER STRATEGIC PARTNERSHIP STUDY

DEPARTMENT OF MARKETING
LOUISIANA STATE UNIVERSITY

APPENDIX B: CORRELATION MATRIXES

Appendix B

Correlation Matrix for Constructs -- Pretest

	Cont	Auto Los	Trust	Strt Ben	Logs Ben	Ovrl Ben	Prd Ben	Hard Asst	Soft Asst	Cop Glbl	Cop Harm	Cop Shr
Cont	1.00											
Auto Los	-.32	1.00										
Trust	.43	-.33	1.00									
Strt Ben	.23	-.22	-.06	1.00								
Logs Ben	.24	.07	.23	.16	1.00							
Ovrl Ben	.28	-.37	.09	.24	.16	1.00						
Prd Ben	-.09	.06	.06	.20	.21	.21	1.00					
Hard Ass	-.09	.11	-.05	.44	.15	.39	.35	1.00				
Soft Ass	.20	.03	.31	.37	.29	.21	.29	.55	1.00			
Cop Glbl	.10	.06	.19	.13	.13	-.07	.38	.20	.50	1.00		
Cop Harm	.57	-.19	.51	.01	.12	.11	.13	-.18	.29	.39	1.00	
Cop Shr	.02	-.33	.26	.26	-.15	.06	.23	.10	.20	.24	.35	1.00

	Cont	Auto Los	Trust	Strt Ben	Logs Ben	Ovrl Ben	Prd Ben	Hard Asst	Soft Asst	Cop Glbl	Cop Harm	Cop Shr
Cop Jnt	.13	.22	.14	-.06	.31	-.03	.16	-.14	.14	.13	.21	-.00
Frml Crd	-.22	.13	-.06	-.22	.07	.08	-.00	.25	.17	.12	-.23	-.01
Mngt Crd	.16	-.12	.18	.25	.06	.19	.06	.41	.43	.21	-.05	-.10
Agrm Crd	.04	-.12	.05	-.05	-.23	.21	.15	.01	.34	.26	.20	.21
Prd Fit	.40	-.34	.37	.45	-.09	.24	.26	.33	.33	.34	.49	.24
Strt Obj	.21	-.06	-.10	.83	.05	-.03	.00	.37	.34	.25	-.05	.06
Logs Obj	.25	.20	.13	.04	.75	-.07	.02	-.00	.36	.24	.04	-.25
Ovrl Obj	.34	-.33	-.03	.22	-.08	.71	.15	.30	.19	.12	.05	-.03
Prd Obj	-.15	.07	.15	.09	.26	.20	.87	.34	.33	.38	.15	.19
Cus Str	.02	.01	.43	.02	.36	.09	.51	.26	.29	.30	.14	.26
Cus Cap	.19	-.40	.64	-.02	.23	.30	.00	.10	.16	.04	.27	.12
Cus Glbl	.30	-.21	.11	.34	-.40	.02	.16	.25	.21	.29	.28	.44

Appendix B (contd.)
Correlation Matrix for Constructs -- Pretest

	Cop Jnt	Frml Crd	Mngt Crd	Agrm Crd	Prd Fit	Strt Obj	Logs Obj	Ovrl Obj	Prd Obj	Cus Str	Cus Cap	Cus Glbl
Cop Jnt	1.00											
Frml Crd	.10	1.00										
Mngt Crd	.12	.29	1.00									
Agrm Crd	.14	.04	.14	1.00								
Prd Fit	-.03	-.30	.48	.02	1.00							
Strt Obj	-.04	-.09	.35	-.02	.32	1.00						
Logs Obj	.35	.15	.18	.07	-.28	.15	1.00					
Ovrl Obj	-.02	.11	.27	.45	.33	.19	-.02	1.00				
Prd Obj	.41	.15	.21	.21	.28	-.01	.11	.10	1.00			
Cus Str	.11	.09	.04	.10	.17	.01	.23	.17	.47	1.00		
Cus Cap	.05	-.04	.06	-.05	.26	-.03	.01	.18	.12	.44	1.00	
Cus Glbl	-.04	.00	.21	.31	.43	.49	-.23	.26	.16	.18	.16	1.00

Appendix B

Correlation Matrix for Constructs -- Full Study

	Cus Str	Cus Pot	Cus Glbl	Cus Cap	Cus Comp	Prd Fit	Frqncy	Strt Obj	Prd Prd	Ovrl Obj
Cus Str	1.000									
Cus Pot	.205	1.000								
Cus Glbl	.205	.194	1.000							
Cus Cap	.601	-.000	.142	1.000						
Cus Comp	.920	.128	.210	.865	1.000					
Prd Fit	.247	-.041	.040	.265	.286	1.000				
Frqncy	-.008	.217	.035	.036	-.002	.025	1.000			
Strt Obj	-.082	.105	.105	-.033	-.069	-.202	.196	1.000		
Prd Obj	-.124	-.002	.043	-.053	-.110	.005	.009	.073	1.000	
Ovrl Obj	.121	.060	-.084	-.075	-.113	.077	-.017	.239	.044	1.000

	Cus Str	Cus Pot	Cus Glbl	Cus Cap	Cus Comp	Prd Fit	Frqncy	Strt Obj	Prd Obj	Ovrl Obj
Logs Obj	-.116	- .091	-.149	-.112	-.128	.088	.049	-.044	.401	.218
Strt Ben	.101	.249	.115	.134	.118	-.033	.260	.649	.056	.240
Prd Ben	-.063	-.086	.065	-.049	-.069	.094	.134	.019	.692	-.058
Ovrl Ben	-.046	-.032	-.044	-.011	-.034	.171	.178	.256	-.030	.424
Logs Ben	.071	-.113	-.035	.062	.083	.119	-.005	-.058	.193	.132
Cop Shr	.168	-.014	-.064	.276	.238	.196	.222	.052	-.036	.074
Cop Flx	-.008	-.008	-.117	.204	.084	.067	.186	.079	.000	.156
Cop Glbl	.111	.032	-.104	.282	.223	.223	.223	.067	-.147	.072
Cop Jnt	.140	-.148	-.135	.192	.172	.211	.258	.055	-.027	-.014
Cop Harm	.248	-.136	.084	.243	.274	.144	-.038	.070	-.149	-.055

Appendix B (contd.)
Correlation Matrix for Constructs -- Full Study

	Cus Str	Cus Pot	Cus Glbl	Cus Cap	Cus Comp	Prd Fit	Frqncy	Strt Obj	Prd Obj	Ovrl Obj
Team Crd	.041	-.023	-.053	.019	.041	.038	-.238	-.106	-.134	.014
Agrm Crd	-.072	.012	-.156	-.069	-.081	.042	-.172	-.129	-.108	.014
Mngt Crd	.044	-.013	.044	.082	.051	.187	.261	.146	.121	.132
Soft Asst	-.021	.164	-.027	.074	.018	.052	.446	.215	-.077	.049
Hard Asst	.117	.161	.180	.096	.130	-.074	.318	.300	.077	-.106
Expos	-.023	.259	-.017	-.111	-.058	-.147	.235	.317	.031	.103
Auto Los	.020	.006	.084	-.029	.001	-.132	.097	.252	.070	.100
Cont	.135	-.076	.152	.212	.181	.080	.168	.163	-.109	-.011
Trust	.299	.012	.113	.419	.388	.242	.079	.097	-.114	-.060

	Logs Obj	Strt Ben	Prd Ben	Ovrl Ben	Logs Ben	Cop Shr	Cop Flx	Cop Glbl	Cop Jnt	Cop Harm
Logs Obj	1.000									
Strt Ben	-.008	1.000								
Prd Ben	.305	.166	1.000							
Ovrl Ben	.015	.483	.289	1.000						
Logs Ben	.650	.105	.426	.263	1.000					
Cop Shr	-.195	.170	.031	.279	.053	1.000				
Cop Flx	-.144	.264	.119	.379	.086	.545	1.000			
Cop Glbl	-.147	.219	.010	.321	.080	.542	.678	1.000		
Cop Jnt	-.011	.272	.269	.438	.116	.232	.312	.290	1.000	
Cop Harm	-.210	.120	.034	.250	-.056	.059	.270	.204	.389	1.000

Appendix B (contd.)
Correlation Matrix for Constructs -- Full Study

	Logs Obj	Strt Ben	Prd Ben	Ovrl Ben	Logs Ben	Cop Shr	Cop Flx	Cop Glbl	Cop Jnt	Cop Harm
Team Crd	-.089	-.017	-.122	-.034	-.206	-.006	-.099	-.136	-.210	.025
Agrm Crd	-.146	-.077	-.015	.027	-.162	-.011	.044	.047	-.158	.032
Mngt Crd	.115	.205	.279	.364	.209	.228	.302	.218	.316	.144
Soft Asst	.004	.184	.091	.283	.099	.260	.401	.383	.304	.174
Hard Asst	.075	.270	.095	.105	.183	.054	.065	.031	.210	.080
Expos	.008	.159	-.002	.056	-.007	-.046	-.023	-.028	-.079	-.166
Auto Los	.149	.287	-.018	.077	.026	-.140	-.186	-.076	.002	-.113
Cont	-.084	.215	.048	.246	.128	.192	.309	.215	.186	.235
Trust	-.085	.211	.034	.252	.196	.245	.335	.370	.326	.389

	Team Crd	Agrm Crd	Mngt Crd	Soft Asst	Hard Asst	Expos	Auto Los	Cont	Trust
Team Crd	1.000								
Agrm Crd	.247	1.000							
Mngt Crd	-.095	-.227	1.000						
Soft Asst	-.130	-.236	.500	1.000					
Hard Asst	-.183	-.397	.226	.422	1.000				
Expos	-.125	-.094	.011	.198	.422	1.000			
Auto Los	-.093	-.219	.051	.064	.265	.306	1.000		
Cont	-.038	-.159	.418	.300	.133	-.101	-.018	1.000	
Trust	-.112	-.105	.291	.366	.195	-.067	-.031	.489	1.000

VITA

Charles C. Nielson received a degree in chemical engineering from Kansas State University in 1966 and a MBA degree from The University of Texas at Austin in 1970. Mr. Nielson had approximately twenty years of industry experience primarily in international sales and marketing management positions in the chemical industry before returning to Louisiana State University to pursue a Ph.D. degree in business administration. His research interests include industrial marketing, sales management, and international business. He has published numerous research and case studies in refereed proceedings and textbooks. Mr. Nielson currently holds the position of assistant professor of World Business at the American Graduate School of International Management in Phoenix, Arizona.

Mr. Nielson is married and has two sons. His personal interests include the history of warfare and military strategy, SCUBA diving, oriental cooking, and physical fitness.

DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: Charles C. Nielson

Major Field: Business Administration (Marketing)

Title of Dissertation: Industrial Buyer-Seller Alliances: An Interorganizational Strategic Perspective

Approved:

William C. Black

Major Professor and Chairman

Daniel Fogel

Dean of the Graduate School

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Date of Examination:

December 10, 1993